

Defense Transportation EDI Program

IMPLEMENTATION PLAN

358*43124001 n/1
N9*RG*1SXX09995N n/1
N9*CN*{carrier freight bill no.
N9*CT*{contract number}*{d
Y7*{transportation priority code
G6*76*880523 n/1
G6*86*880525 n/1
PER*IC**TE*3013207272 n/1
PER*EF**TE*7037560000 n/1
F9**Jacksonville*NC*****{spl
D9**Charleston*SC*****{spl
R2*CSXT*1*Jacksonville n/1
H3*HHB n/1
NTE*APS*4,6120,AR
NTE*PAY*71656 n/1
N7*TTWX*993476*

19960913 091

DEPARTMENT OF DEFENSE

DECLASSIFICATION STATEMENT A

Approved for public release
Distribution Unlimited

DTIC QUALITY INSPECTED 1



ACQUISITION AND
TECHNOLOGY

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON DC 20301-3000



10 4 JUN 1996

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (INSTALLATIONS,
LOGISTICS, AND ENVIRONMENT)
ASSISTANT SECRETARY OF THE NAVY (RESEARCH,
DEVELOPMENT, AND ACQUISITION)
ASSISTANT SECRETARY OF THE AIR FORCE (ACQUISITION)
DIRECTORS OF THE DEFENSE AGENCIES
DIRECTOR FOR LOGISTICS (J-4), JOINT STAFF
DEPUTY COMMANDER-IN-CHIEF, U.S. TRANSPORTATION
COMMAND

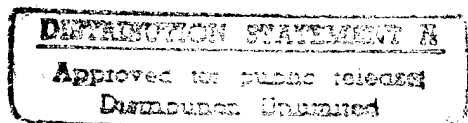
SUBJECT: Defense Transportation Electronic Data Interchange (DTEDI) Implementation Plan

I am pleased to forward the attached DTEDI Implementation Plan for your information and action. The U.S. Transportation Command (USTRANSCOM) developed the Plan at the direction of my office and in coordination with the DoD Components.

The Implementation Plan outlines the requirements for the use of EDI in Defense transportation and details operating concepts, associated tasks, schedules, and the milestones needed to achieve our EDI objectives. It is essential that all DoD Components work in concert with USTRANSCOM to implement the actions addressed in the Plan. It is especially critical that Components allocate the necessary resources to accelerate the implementation of EDI applications in support of Defense transportation business processes. The Implementation Plan provides an excellent vehicle to support us in that endeavor.

I fully support the Plan's program of action. As lead for the DTEDI program, USTRANSCOM will coordinate DoD efforts in implementing the actions identified in the Plan. To facilitate this process, future updates and the status of implementation actions will be available through USTRANSCOM's Home Page of the Worldwide Web.

I solicit your help in completing those actions under your purview and appreciate your cooperation in assisting USTRANSCOM in this critical undertaking.



John Phillips
John F. Phillips
Deputy Under Secretary
of Defense (Logistics)

Attachment



FOREWORD

The United States Transportation Command (USTRANSCOM) has been designated as the program manager for the Defense Transportation Electronic Data Interchange (DTEDI) Program. As program manager, USTRANSCOM has developed an aggressive program to accelerate the pace of EDI implementation in support of transportation. This plan provides the framework and focus on activities required to meet the EDI implementation in support of defense transportation. This implementation plan is specifically aimed at focusing energy, attention, and resources toward expanding EDI uses in support of DoD transportation business information exchanges.

This plan identifies basic requirements for the use of EDI in support of DoD transportation; however, the initial version of the plan focuses on freight movements and associated electronic payments. It is intended to be a living document that will be supplemented with additional chapters and implementing schedules to cover personal property shipments, passengers, and any new issues which need to be addressed to improve timely and effective information exchange between vendors, DoD shippers, transshippers, receivers, carriers, and other required trading partners. As operating concepts are finalized, aggressive implementation dates will be established for each trading partner and published with the plan. To support this plan as a living document, USTRANSCOM will publish the plan and its updates on the USTRANSCOM Home Page on the Worldwide Web.

This plan has been coordinated with the Office of the Secretary of Defense, the Joint Staff, the military Services, and the defense agencies. The plan is consistent with the goals and objectives of the DoD Logistics Strategic Plan; the Defense Total Asset Visibility Implementation Plan; the DoD In-Transit Visibility Integration Plan; and the Draft Electronic Commerce and Electronic Data Interchange Requirements, Systems, and Implementation Strategy. USTRANSCOM is the primary agency to coordinate DoD-wide efforts to implement this plan and ensure DoD gains advantages from the early implementation of EDI in support of defense transportation. However, the continuing involvement of all DoD components is required to identify and implement system and procedural changes necessary to effectively use EDI as a means of information exchange.

Comments and suggestions should be forwarded to: USTRANSCOM/TCJ4-LT, 508 Scott Drive, Scott AFB IL 62225-5357.



ROBERT L. RUTHERFORD
General, USAF
Commander in Chief
United States Transportation Command

Contents

Chapter 1. Introduction	1-1
Purpose	1-1
Background	1-1
Organization of Plan	1-3
Chapter 2. Program Management Success Factors	2-1
Overview	2-1
Program Administration	2-2
Technology Management	2-8
Future Initiatives	2-11
Summary	2-12
Chapter 3. DoD's EDI Freight Program	3-1
Transportation EDI Processes	3-1
Key Programs	3-6
Summary	3-7
Chapter 4. Personal Property — to be developed	
Chapter 5. Passenger — to be developed	
Chapter 6. EDI Telecommunications Considerations	6-1
Background	6-1
General Requirements	6-1
Current EDI Telecommunications Strategy	6-2
EDI Telecommunications Alternatives	6-2
Issues	6-8
Summary	6-9

Contents (Continued)

Appendix A. ASC X12 Transaction Sets

Appendix B. Required EDI VAN Services

Appendix C. Freight EDI Program: Operating Concepts and
Schedules

Appendix D. Personal Property

Appendix E. Passenger

Illustrations

2-1. Lead Agent Implementation Schedule	2-3
2-2. Trading Partner Management Implementation Schedule	2-4
2-3. Integrating Military Service and Defense Agency Implementation Plans	2-5
2-4. Program Performance Implementation Schedule	2-6
2-5. Program Funding Requirements Schedule	2-7
2-6. DQ Program Implementation Schedule	2-9
2-7. Communications Requirements Development Schedule	2-11
3-1. Transportation Processes	3-1
6-1. FACNET EDI VAN Access	6-3
6-2. FTS 2000 and Commercially Procured EDI VAN Access	6-6

Tables

3-1. Key Logistics Programs vs. DTEDI Processes	3-7
---	-----

CHAPTER 1

Introduction

PURPOSE

The Department of Defense (DoD) is seeking to expand its use of electronic data interchange (EDI) techniques in logistics processes. Currently, the Defense transportation community is exchanging bills of lading, invoices, rate tenders, and shipment status messages electronically among its members and commercial industry. Introducing EDI technology into those processes has directly benefited several DoD logistics programs, including the total asset visibility (TAV) and intransit visibility (ITV) integration programs. Now, the Defense transportation community seeks to complete the insertion of EDI into those processes and accelerate its expansion to new applications.

In a 18 January 1995 memorandum, the Deputy Under Secretary of Defense — Logistics, designated the United States Transportation Command (USTRANSCOM) as lead agent for the Defense transportation EDI (DTEDI) program. Immediately following that designation, USTRANSCOM developed a plan that presented a strategy for managing the program. That strategy calls for USTRANSCOM to develop a comprehensive implementation plan that fosters further development and expansion of the DTEDI program. Since that time, USTRANSCOM has undertaken a series of actions that will enable the Defense transportation community to improve its program management capabilities, continue expanding its EDI efforts, and accelerate the development of new initiatives. This program implementation plan describes those actions for the freight transportation program and presents schedules for implementing them. During the next several months, USTRANSCOM expects to develop similar actions for the areas of personal property and passenger transportation. Those actions will then be included in this plan, as appropriate.

BACKGROUND

In a May 1994 memorandum to the Secretaries of the Military Departments and Directors of Defense agencies, the Deputy Under Secretary of Defense — Logistics directed all DoD Components to make maximum use of EDI in their business-related transactions. Since 1986, when the Assistant Deputy Under Secretary of Defense — Transportation Policy, ADUSD(TP), conceived the DTEDI program, the Defense transportation community has struggled to sustain initial development efforts. Often using minimal resources, the DTEDI program has had some success in implementing EDI capability in three areas — transportation rates, government bills of lading (GBLs), and carrier invoices. As a means

of more efficiently advancing those efforts, the Defense transportation community established the DTEDI committee to guide it through the initial areas of EDI development into a long-term EDI maintenance effort.

In 1992, the Military Traffic Management Command (MTMC) fielded its Standard Tender Electronic Processing (STEP) system. That system receives electronically formatted rates from commercial carriers and uploads them into an automated rate file. Defense shipping activities access that rate file to determine the cost of a shipment before it is moved. To date, MTMC has qualified more than 80 commercial carriers for submitting rates electronically through the STEP system.

In February 1994, the Defense Logistics Agency (DLA) began transmitting GBLs electronically to the Defense Finance and Accounting Service-Indianapolis Center (DFAS-IN) by way of MTMC's CONUS Freight Management (CFM) system. Supported first by its legacy wholesale depot system, DLA transitioned that capability in 1994 to its migration system, the Distribution Standard System (DSS), at six of its traditional depots. In the near future, DLA plans to field DSS at the depots it inherited from the Military Services. DLA is now electronically exchanging more than 600,000 Guaranteed Traffic (GT) and foreign military sales (FMS) GBLs annually with MTMC, while DFAS-IN is receiving 180,000 GT GBLs, also electronically.

In 1995, the Defense transportation community began expanding the electronic bill of lading program to Military service shipping activities by capturing both guaranteed and non-guaranteed traffic bills. During this expansion process, the community faced several significant challenges. This situation came to the attention of the Under Secretary of Defense for Acquisition and Technology and the Under Secretary of Defense/Comptroller who issued guidance that called for the transportation and finance communities to establish an executive bill of lading payment steering group. That group initiated a detailed system integration test (SIT) and on 1 March 1996 appointed USTRANSCOM director of the test. The objective of the test is to validate that the business and systems processes associated with costing and paying transportation bills support all requirements of the Defense EDI payment program. To date, that test has identified more than 40 policy, procedural, business practice, and automation actions. As a result, USTRANSCOM, as SIT test director, has gained agreement from DTEDI systems managers to implement those actions according to a fixed schedule.

Complementing DLA's electronic GBL efforts, DFAS-IN developed the Defense Transportation Payment System (DTRS) to receive and process carrier invoices electronically. It began testing electronic invoice capability in 1994 and continues to test with commercial carriers.

While the Defense transportation community has experienced some successes, it has also experienced many difficulties associated with the development and fielding of EDI initiatives. However, the DTEDI committee has been particularly instrumental in resolving those difficulties. As a consequence, these

EDI initiatives have matured past the development phase and are entering the life-cycle phase. The DTEDI committee, with its established administrative and technical procedures, provides a strong basis for addressing the issues associated with this new phase. Moreover, the Defense transportation community is now well-positioned for expanding EDI applications to all facets of transportation and adapting to rapidly changing business and technological environments.

ORGANIZATION OF PLAN

This plan presents DoD's strategy for improving its DTEDI program management efforts, expanding its EDI freight program, and accelerating its development of EDI in new areas of transportation. The components of the plan are presented in six chapters and five appendices:

- ◆ Chapter 2 calls for the Defense transportation community to embrace nine program management success factors that contribute to improved program administration and technology management. It also proposes a list of future EDI initiatives that the community should undertake.
- ◆ Chapter 3 describes Defense transportation's EDI freight program. Under the areas of tender submission, planning, movement, and payment, the chapter targets 11 transportation processes for enhancement. It also identifies seven DoD logistics initiatives that will directly benefit from those enhanced processes.
- ◆ Chapters 4 and 5 are reserved for DoD's EDI programs for passenger and personal property transportation, respectively. Those chapters will be developed during FY96.
- ◆ Chapter 6 examines various alternatives and issues associated with the Defense transportation community satisfying its future telecommunications requirements.
- ◆ Appendix A contains two tables. The first table lists all Accredited Standards Committee (ASC) X12 transaction sets cited in the report, while the second identifies the transaction sets that DTEDI trading partners must implement. Appendix B lists DTEDI's value-added network telecommunications service requirements. Appendix C contains the operating concepts and schedules for expanding the DTEDI program. It subdivides the 11 transportation processes into 15 EDI projects and provides an operating concept and implementation plan for each project. Appendices D and E will contain operating concepts and schedules for the personal property and passenger EDI programs; they will be developed during FY96.

CHAPTER 2

Program Management Success Factors

OVERVIEW

When implementing an EDI program, business trading partners convert paper-based processes to electronic processes. Their objective is to automate the transfer of data between information systems that are conceived and developed for independent purposes. During this implementation effort, trading partners focus on standardizing core information processes and system interfaces. In so doing, they may streamline the processes, automate the manual steps in those processes, and test and implement the system interfaces. However, an EDI program does not end with implementation; it continues into a life-cycle maintenance phase.

In 1987, when the Defense transportation community began implementing the electronic bill of lading payment process, it did not have the procedures in place for organizing and managing the EDI life-cycle phase. Now, however, through the efforts of the DTEDI committee, it changes and revises industry standards, rather than defining them. It also supports the transitioning from one telecommunications network to another, rather than initiating a new telecommunications network. While continuing to develop new trading partner agreements, it is also maintaining existing agreements. In addition, with the visibility that the program is receiving at the highest levels of DoD, the Defense transportation community needs to monitor program performance with greater accuracy. As a result of these and other changes, the community needs to expand and update its program management efforts.

Several critical success factors are key to those efforts. Those factors can be classified into two categories — program administration and technology management.

- ◆ *Program administration.* This category consists of the factors that are associated with managing the business aspects of the DTEDI program.
- ◆ *Technology management.* This category consists of the factors that contribute to the management of technology, particularly telecommunications and data administration issues.

In the remainder of this chapter, we describe these success factors, list a series of actions for ensuring that such factors are incorporated into the DTEDI program, and establish a schedule for accomplishing the actions. Finally, we identify three EDI opportunities that the Defense transportation community needs to explore.

PROGRAM ADMINISTRATION

With the growth of the DTEDI program into the EDI life-cycle management phase, the DTEDI committee needs to improve its management of the program. Specifically, USTRANSCOM should consider the factors described below in improving its program management practices.

Recognize One Lead Agent for the DTEDI Program

Since 1986, responsibility for oversight of transportation EDI projects has been assigned to various organizations. Since assuming the chair of the DTEDI committee, USTRANSCOM has assessed its internal staffing requirements to fulfill the lead agent role and initiated the development of this implementation plan.

ACTION ITEMS

As the lead agent for the DTEDI program, USTRANSCOM will take the following actions:

- ◆ *Integrate DTEDI requirements.* Develop a plan that describes how it will carry out its DTEDI program responsibilities.
- ◆ *Reestablish DTEDI committee.* Chair the DTEDI committee, develop a formal organizational structure, identify clear roles and responsibilities for the committee and its members, and task members to lead committee initiatives.
- ◆ *Establish memorandums of understanding (MOUs).* Establish an MOU with the Defense Logistics Management Standards Office (DLMSO) that defines the working relationships of the two organizations. Identified by the Assistant Deputy Under Secretary of Defense for Transportation Policy (ADUSD-TP) as the Technical Secretariat to the DTEDI committee, DLMSO is responsible for maintaining all transportation implementation conventions (ICs).
- ◆ *Develop, update, and execute a comprehensive implementation plan.* Detail an implementation plan that identifies the goals, objectives, tasks, and schedules for the development and expansion of EDI in Defense transportation. That plan will include a concept of operations, communications architecture, and schedule for guiding the implementation efforts.

SCHEDULE

Figure 2-1 outlines a schedule for USTRANSCOM to accomplish the above actions.

Action	1995												199
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Integrate DTEDI requirements													
Reestablish DTEDI committee					▲								
Establish MOUs													
Develop, update, and execute a comprehensive implementation plan													

Figure 2-1.
Lead Agent Implementation Schedule

Centralize Trading Partner Management

In order to provide a single DoD focal point for industry, MTMC has established an office to administer formal agreements with commercial trading partners. That office is responsible for establishing, cataloging, and maintaining legal trading partner agreements (TPAs) with all commercial carriers that conduct business with DoD. Currently, it maintains more than 100 TPAs. MTMC will prepare formal guidelines for maintaining agreements with commercial carriers that support the Air Mobility Command (AMC) and Military Sealift Command (MSC).

ACTION ITEMS

To ensure a successful trading partner management office, MTMC will take the following actions:

- ◆ *Formalize TPA office.* Designate an individual to lead the EDI TPA office and define an organizational structure for that office.
- ◆ *Identify roles and responsibilities.* Develop specific roles and responsibilities for the EDI TPA office administrator and staff. Those roles and responsibilities will include the development of both commercial and government trading partner documents such as TPAs, MOUs, and interface requirements documents (IRDs).
- ◆ *Staff office.* Assign the required personnel and other resources to the TPA office.
- ◆ *Develop procedures for administering TPAs.* Develop, publish, and distribute formal procedures for supporting TPA administration.
- ◆ *Establish procedures for developing TPAs.* Help AMC and MSC to develop procedures for establishing TPAs with commercial trading partners.
- ◆ *Develop TPA information file.* Develop an automated file system to streamline the TPA maintenance process. (This capability will support the

growing number of trading partners and the complex nature of organizing trading partner information.)

- ◆ *Maintain TPAs.* Use the information file system to add, remove, and maintain TPAs; update the TPA legal and business documentation, as needed.

SCHEDULE

Figure 2-2 proposes a schedule for MTMC to establish, staff, and support a TPA office.

Action	Schedule								
	1994 Oct	1995				1996			
		Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct
Formalize TPA office	▲								
Identify roles and responsibilities						■			
Staff office	▲								
Develop procedures for administering TPAs						■			
Establish procedures for developing TPAs						■			
Develop TPA information file						■	■		
Maintain TPAs		■	■	■	■	■	■	■	■

Figure 2-2.
Trading Partner Management Implementation Schedule

Coordinate Military Service and Defense Agency Implementation Plans

As a means of accelerating implementation of the DTEDI program, the Military Services, USTRANSCOM component commands, and DLA need to simultaneously implement EDI for several transportation processes. Those efforts require each organization to develop and share its implementation plans and schedules. In addition, USTRANSCOM will exercise configuration control over those plans by collecting and integrating them using a computerized project management system. As the lead agent, USTRANSCOM will execute systems and data configuration control in cooperation with the DTEDI committee and SIT test team members.

ACTION ITEMS

To achieve the desired level of coordination, USTRANSCOM will take the following actions:

- ◆ *Request DoD Components develop organization-specific implementation plans.* Request Military Services, USTRANSCOM component commands, and DLA incorporate the operating concepts and schedules presented in Appendix C of this plan in their implementation plans.
- ◆ *Integrate schedules.* Integrate all DTEDI implementation schedules using project management computer software.
- ◆ *Maintain and publish an integrated schedule.* Provide an integrated implementation schedule to the Defense transportation community on a regular basis.

SCHEDULE

Figure 2-3 provides a schedule for accomplishing the above actions.

Action	1996					
	Jan	Feb	Mar	Apr	May	Jun
Request DoD Components develop organization-specific implementation plans						
Integrate schedules						
Maintain and publish an integrated schedule						

Figure 2-3.
Integrating Military Service and Defense Agency Implementation Plans

Measure Program Performance

The DTEDI program is receiving extensive attention from both the Deputy Under Secretary of Defense (Logistics), DUSD(L), and DoD Comptroller. In response to that attention, the Deputy Commander-in-Chief, USTRANSCOM, directed the development of performance metrics for monitoring the success of the program. That effort consists of several actions.

ACTION ITEMS

To establish performance measurements for the DTEDI program, USTRANSCOM will take the following actions:

- ◆ *Establish metrics.* Develop a list of measurement factors for use in gauging performance of the DTEDI program and its participants.
- ◆ *Identify performance measurement tools.* Assess the effectiveness of various computer software and other tools for measuring performance.
- ◆ *Develop performance tracking capability.* Develop methods for collecting performance data from DTEDI participants; augment the measurement tools to satisfy measurement requirements, as needed.
- ◆ *Generate performance reports.* Prepare performance reports and distribute them on a regular basis.

SCHEDULE

Figure 2-4 presents a schedule for USTRANSCOM to accomplish the above tasks.

Action	1996											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Establish metrics	■											
Identify performance measurement tools	■	■										
Develop performance tracking capability		■	■									
Generate performance reports			■	■	■	■	■	■	■	■	■	■

Figure 2-4.
Program Performance Implementation Schedule

Monitor Program Funding Requirements

For the past few years, the Defense transportation community has focused on implementing one effort — the electronic payment of transportation bills of lading. Lacking organized financial oversight, that effort has suffered numerous setbacks because of funding shortfalls. The Corporate Information Management (CIM) program contributed to those shortfalls because it prohibited the funding of all legacy system enhancements including EDI. Because the Defense transportation community is now ready to accelerate the electronic bill payment project and expand into other areas of transportation, effective and timely funding is critical. In order to ensure the program is adequately funded, USTRANSCOM,

as the lead agent, needs to maintain visibility of all program funding requirements. It also needs to recommend alternative sources of EDI funding and support various organizations obtaining access to those funds.

ACTION ITEMS

When completed, the following actions will enable USTRANSCOM to fulfill its funding coordinator responsibilities:

- ◆ *Identify financial points of contact.* Request EDI financial points of contact from all organizations participating in the DTEDI program.
- ◆ *Provide EDI funding profiles.* Request all participants in the DTEDI program to submit their funding profiles. USTRANSCOM will provide participants with a standard funding profile worksheet to streamline this effort.
- ◆ *Catalog funding profiles.* Compile and summarize all EDI funding profiles.
- ◆ *Track and report funding status.* Report trading partner funding requirements to the Defense transportation community and others on a regular basis.

SCHEDULE

Figure 2-5 proposes a schedule for USTRANSCOM to accomplish the above tasks.

Action	1995	1996		
	Dec	Jan	Feb	Mar
Identify financial points of contact		▲		
Provide EDI funding profiles		—		
Catalog funding profiles		—		
Track and report funding status			→	→

Figure 2-5.
Program Funding Requirements Schedule

TECHNOLOGY MANAGEMENT

As the DTEDI program transitions into its life-cycle management phase, the Defense transportation community and USTRANSCOM need to improve their procedures for managing the associated technologies. Specifically, they need to consider several factors in developing a technical configuration management program.

Resolve Data Quality Problems

During the electronic payment program, the Defense transportation community identified numerous data quality (DQ) problems. Those problems arose because trading partners failed to use industry standard formats and trading partners generated source data with too many errors. In order to more effectively identify and resolve its DQ problems, the DTEDI committee needs to develop a rigorous error-correction program.

ACTION ITEMS

To initiate an aggressive DQ program, USTRANSCOM, through the DTEDI committee, will take the following actions:

- ◆ *Establish DQ task group.* Appoint a task group to oversee the identification and resolution of DQ problems.
- ◆ *Identify program objectives.* Assign responsibility to the DQ task group to develop guidelines for delegating DQ projects to the appropriate organizations and activities, monitor progress, and act upon the results, as required. It will also formulate objectives associated with steering the DQ program, identify private-industry configuration management methods for automated information systems, and use those methods to oversee all technical upgrades to the DTEDI program.
- ◆ *Develop administrative procedures.* Assign responsibility to the DQ task group to develop a methodology for identifying DQ problems, determining their causes and effects, selecting alternative solutions, and recommending courses of action.
- ◆ *Maintain DQ program.* Assign responsibility to the DQ task group to review current DQ initiatives and launch additional actions. As required, USTRANSCOM will facilitate coordination between trading partners and owners of shared reference files to ensure data integrity.

SCHEDULE

Figure 2-6 presents a schedule for accomplishing the above actions.





Action	1996			
	Jan	Feb	Mar	Apr
Establish DQ task group				
Identify program objectives				
Develop administrative procedures				
Maintain DQ program				

Figure 2-6.
DQ Program Implementation Schedule

Consider Other Data Quality Matters

As the DTEDI program matures, the Defense transportation community is finding it difficult to manage three DQ issues on a daily basis. Those issues are described briefly below.

- ◆ *Maintain ICs.* When using EDI to exchange information, trading partners first develop a detailed list of the information or data requirements. After agreeing to a data requirement, DLMSO publishes an IC that combines a specific version of an EDI industry standard with a current definition of the data requirement. The IC also provides a detailed computer system design specification that trading partners use to develop an EDI capability on their systems. The maintenance of current ICs requires nearly daily attention. In 1993, the DTEDI committee implemented rigorous procedures for maintaining ICs. The DTEDI Data Maintenance (DM) task group carries out those procedures. Since its creation, that group has processed more than 160 changes to various DTEDI data requirements including the GBL and carrier invoices.
- ◆ *Upgrade current versions of industry standards.* The Defense transportation community currently exchanges various versions of the Accredited Standards Committee (ASC) X12 standards. Some of those standards need to be upgraded. In order to simplify the upgrade process, USTRANSCOM should develop a methodology for tracking changes to DTEDI data requirements, ICs, and industry standards. It must also coordinate those changes to lower the associated burden on trading partners.

- ◆ *Coordinate DM implementation dates.* As ICs change, DTEDI users need to modify their transportation systems to incorporate the changes. USTRANSCOM plans to develop a tracking system that identifies who is responsible for enhancements, when they should be delivered, and when they are implemented.

Use Commercial Off-The-Shelf Software

In *A Guide for Acquiring Software Development Services*, September 1993, the General Services Administration (GSA) concluded that "If commercial software or another agency's software meets the agency's requirements at a reasonable price, it should acquire the existing software rather than develop new software." DoD Instruction 5000.2, *Defense Acquisition Management Policies and Procedures*, 23 February 1991, further states that

Materiel and software requirements shall be satisfied to the maximum practicable extent through the use of nondevelopmental items when such products will meet the user's needs and are cost-effective over the entire life cycle.

Although we do not propose a series of actions for following this guidance, it is clearly a responsibility of USTRANSCOM and the Defense transportation community to use commercial off-the-shelf software to support their EDI efforts whenever possible.

Ensure a Viable Communications Infrastructure

As a key trading partner in the DTEDI program, MTMC expects to process a minimum of 50 million EDI transactions a year.¹ Even this estimate fails to include some DTEDI transactions. A comprehensive estimate of the telecommunications requirements stemming from the DTEDI program is not available. Those requirements are critical to selecting the best solution. (Chapter 6 of this plan explores some of the associated issues and potential solutions.) Nonetheless, the Defense transportation community needs to plan for using either commercial or organic telecommunications capabilities. Some of the actions associated with such an effort are discussed below.

¹Logistics Management Institute Report MT403MR1 (Draft), *An EDI Strategic Plan for the Military Traffic Management Command*, W. Michael Bridges and Charles D. Williams, September 1995.

ACTION ITEMS

Before the Defense transportation community selects a telecommunications infrastructure solution, USTRANSCOM needs to accomplish three primary actions:

- ◆ *Project current and future telecommunications requirements.* Survey the Military Services and Defense agencies to obtain information on future telecommunications requirements stemming from their DTEDI efforts, including transaction volumes and value-added services. Present the results of that survey in a formal telecommunications report.
- ◆ *Assess telecommunications alternatives.* Endorse, following an assessment of alternative telecommunications solutions, a telecommunications solution that will support the DTEDI program into the next decade.
- ◆ *Publish telecommunications plan and schedule.* Publish a report detailing the DTEDI telecommunications solution.

SCHEDULE

Figure 2-7 outlines the schedule for accomplishing the above actions.

Action	1996			
	Jan	Feb	Mar	Apr
Project current and future telecommunications requirements	■	■		
Assess telecommunications alternatives		■	■	
Publish telecommunications plan and schedule			■	■

Figure 2-7.
Communications Requirements Development Schedule

FUTURE INITIATIVES

In order for the Defense transportation community to continuously improve its business techniques, it must enhance its EDI capabilities. In so doing, it needs to undertake the initiatives discussed below.

Evaluate Emerging EDI Applications and Techniques

The commercial sector is always searching for new ways to employ EDI technology. The airline and travel industry are developing interactive EDI

applications for performing near real-time booking of hotels, rental cars, and airline seats. The ASC X12 committee has developed transaction sets that enable users to encrypt electronic signatures and digitize photographic images. In addition, industry is testing the telecommunications and value-added capabilities of the Internet. These are only a few of the emerging EDI applications and techniques that lend themselves to Defense transportation's reengineering efforts. In order to gain and maintain its business advantage, the Defense transportation community needs to evaluate these applications and techniques as it continues to simplify existing processes and automate new ones.

Pursue the Development of EDI for Administration, Commerce, and Transport

The international community is developing the global standards of EDI for Administration, Commerce, and Transport (EDIFACT). Those standards are based on a variable-length record format similar to those used in the ASC X12 standards. Because the development and implementation of the EDIFACT standards are governed by international users, the Defense transportation community will need to use these standards to communicate with foreign carriers and governments. As a consequence, it needs to stay abreast of all current and future EDIFACT developments.

Integrate EDI with Identification Technologies

Identification technologies, such as radio frequency and laser tags, and linear and two-dimensional bar-code symbologies, offer an alternative communications medium for exchanging EDI-formatted data. By using ASC X12 formats to store data on these media, end-users could increase the volume and improve the accuracy of the information they are exchanging. Combining EDI formats with identification technologies could improve the quality of information on carton labels, container tags, and conveyance identification tags.

SUMMARY

This chapter identifies the program management success factors the Defense transportation community needs to embrace as it moves into the life-cycle management phase of the DTEDI program. When the Defense transportation community expands its efforts into the 11 transportation processes identified in Chapter 3 of this plan, these success factors should contribute substantially to the development of strong business and technical practices. Additionally, its focus on future initiatives will ensure that its application of EDI techniques will remain a leading-edge example for global industries and foreign governments alike.

CHAPTER 3

DoD's EDI Freight Program

Implementing EDI in DoD's freight transportation system affects 11 transportation processes. This chapter summarizes those processes and their current state of EDI capability. It also identifies several key DoD transportation programs that will benefit from infusing EDI technology into the 11 processes.

TRANSPORTATION EDI PROCESSES

As shown in Figure 3-1, the overall Defense transportation freight movement process can be divided into four areas: tender submission, planning, movement, and payment. Each of the 11 EDI processes is identified within one of these four areas. In the remainder of this section, we describe the status of the Defense transportation community's EDI initiatives in each of the 11 processes.

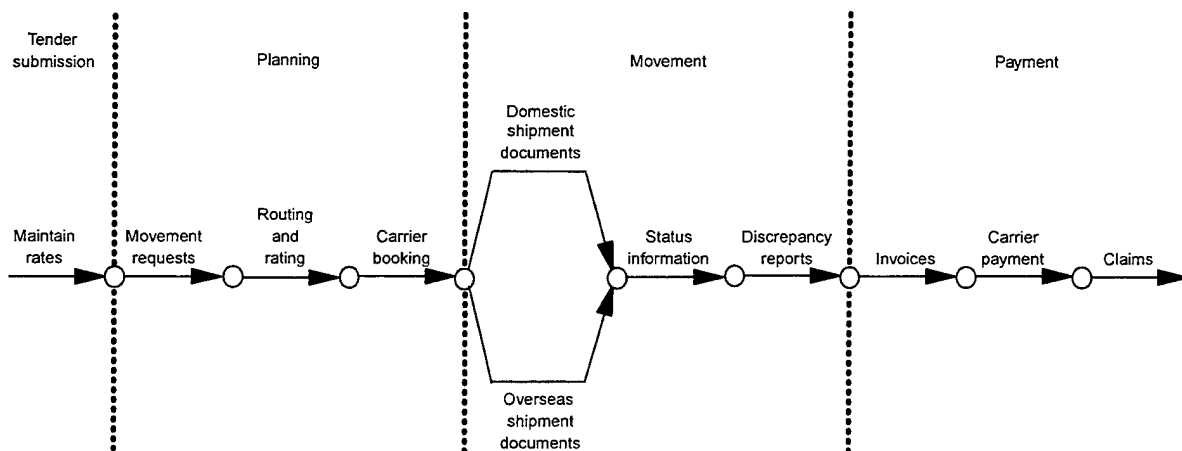


Figure 3-1.
Transportation Processes

Tender Submission

MAINTAIN RATES

Although maintain rates is the only process identified with the tender submission area, it consists of three subprocesses — guaranteed traffic (GT) tenders; voluntary/negotiated tenders; and overseas rates.

Before a Defense shipper can satisfy its transportation requirements, it needs to access carrier rate information. Three DoD Components manage carrier rates: MTMC, AMC, and MSC. Currently, MTMC has successfully implemented an EDI program for voluntary/negotiated tenders; it also plans to implement an EDI capability for GTs by March 1996. When fully implemented, MTMC's EDI systems will enable it to receive and store transportation rates electronically for retrieval by shippers during the routing and rating process.

To expand the use of EDI in the areas of tender submission, AMC and MSC, which are responsible for determining rates for overseas movements, need to implement EDI for overseas rate agreements.

Planning

The transportation planning area consists of three processes — movement requests, routing and rating, and carrier booking.

MOVEMENT REQUESTS

When a shipper receives a material release order (MRO), unit move instructions, or other movement request information from a customer activity, it begins to prepare the movement documentation. The shipper and supply activities then exchange MRO information using the Defense Logistics Standard System (DLSS) transactions. In the *Department of Defense Logistics Strategic Plan (Edition 1995)*, 17 July 1995, the DUSD(L) directed the Military Services and DLA to implement the Defense Logistics Management Standards (DLMS) Version 2.0, beginning in October 1995 and concluding by October 1998. The DLMS Version 2.0 program calls for shipping and supply activities to exchange the new ASC X12 Transaction Set 511, Requisition, and other EDI transactions in place of the old DLSS standards. However, no DoD shipping activity has implemented DLMS 2.0.

ROUTING AND RATING

MTMC plans to forward negotiated GT rates electronically to shippers in 1996. In addition to that effort, MTMC and the shippers have designed a routing and rating interface for voluntary/negotiated rates. To date, MTMC has developed the data requirements and ICs for this interface, and initiated operations with some DoD shipping activities. AMC and MSC need to assess the feasibility of using EDI to enhance their overseas routing and rating processes.

CARRIER BOOKING

Shippers, ports, and clearance authorities are responsible for booking carriers. Today, motor, rail, air, and ocean carriers use mode-specific EDI transaction

sets to conduct their booking and appointment scheduling operations. As part of its implementation plan, the DTEDI committee needs to assess the use of generic transaction sets before finalizing an operating concept. MTMC's Integrated Booking System program office is currently testing EDI transactions in support of booking containers for overseas shipment.

Movement

The movement area consists of four processes — domestic shipment documents, overseas shipment documents, status information, and discrepancy reports.

DOMESTIC SHIPMENT DOCUMENTS

To automatically process domestic shipment documents, Defense activities need the capability to exchange and process both GBLs, commercial bills of lading (CBLs), and other commercial paper electronically. To support the GBL payment program, DoD shipping activities need the capability to exchange bill of lading information with DFAS, MTMC, GSA, consignees, and commercial carriers. In support of DoD's ITV program, DoD shippers need to forward electronic shipment information to USTRANSCOM's Global Transportation Network (GTN).

In support of the GBL payment program, DLA exchanges nearly 180,000 electronic GBLs with DFAS-IN annually. (DLA's DSS is currently the only wholesale depot system with an EDI capability.) Before DFAS-IN can realize any of the projected economic benefits from the electronic payment program, it needs to increase the number of GBLs that it receives electronically. Recognizing the critical need to increase shipper participation in that program, the Under Secretary of Defense for Acquisition and Technology and the Under Secretary of Defense (Comptroller) directed all DFAS-IN trading partners to accelerate their implementation of electronic GBLs. That guidance calls for the Army, Air Force, and DLA transportation systems significantly increase electronic GBL capability by the end of FY96. In addition, the Assistant Deputy Under Secretary of Defense — Transportation Policy requested USTRANSCOM to serve as SIT test director and to perform a formal system integration test that has identified more than forty action items the community needs to address. As projected by the test director at USTRANSCOM, these actions should increase electronic bill of lading volumes to more than 80 percent of all motor freight bills. In addition, as a means of expanding the electronic payment program to include commercial paper, the Defense transportation community is developing a plan for implementing an electronic CBL capability.

MTMC's CFM system is the central repository for all electronic bills of lading. It receives bills of lading from shippers and forwards them to DFAS. The Defense transportation community is examining the feasibility of using the CFM

system to forward electronic bills of lading to all trading partners including carriers, consignees, and other organizations involved in that process.

OVERSEAS SHIPMENT DOCUMENTS

Shippers use various shipping documents, including GBLs, Transportation Control and Movement Documents (TCMDs), and commercial paper, to move shipments to ports of embarkation (POEs). The POEs, however, do not have the capability to receive GBLs electronically; they also lack the capability to receive or create other transportation documents, such as TCMDs and manifests using EDI public standards. To move shipments from ports of debarkation (PODs) to in-theater consignees, USTRANSCOM has called for the implementation of a joint theater transportation system by late 1997.¹ That system will interface electronically with foreign carriers and customs services, completing the EDI transportation link in the overseas transportation process.

This process presents the largest and most complex DTEDI challenges in this plan. To electronically process overseas shipment documents, the Defense transportation community needs to develop at least 10 telecommunications links among 15 different systems and support more than 80 EDI interfaces. Because the electronic GBL is the only information flow currently operational, the Defense transportation community needs to develop a detailed implementation plan and schedule for the overseas shipment documents process.

STATUS INFORMATION

The *Defense Intransit Visibility Integration Plan* proposes a methodology and schedule for developing the capability to monitor the status of freight, personal property, and passenger moves. It also identifies several initiatives that the Defense transportation community needs to undertake before its systems are capable of reporting ITV status to GTN. Those initiatives include the development of a joint theater transportation system and interfaces between GTN and the CFM system, port systems, and commercial carriers. Drawing extensively from the ITV plan, Appendix C presents a schedule for implementing freight status messages.

The prototype GTN Version 2.3 provides ITV capability for overseas shipments between air and surface POEs and PODs by interfacing with the Defense Automated Addressing System (DAAS); Worldwide Port System (WPS); Terminal Management System (TERMS); Mechanized Export Traffic System II (METS II); and Headquarters On-Line System for Transportation (HOST). In addition, USTRANSCOM is testing an ITV capability for shipments within CONUS. The implementation schedule presented in the *Defense Intransit Visibility Integration Plan* calls for GTN to have a bill of lading receipt capability by November 1996.

¹*Defense Intransit Visibility Integration Plan*, United States Transportation Command, February 1995, Figure C-1, page C-6.

DISCREPANCY REPORTS

When the shipment status process is fully implemented, the Defense transportation community should be capable of using EDI to improve the discrepancy report process with minimal effort. All Defense activities expected to report discrepancies would then have the capability to report status information electronically. This capability would enable users to use the same hardware, software, and telecommunications networks to implement electronic discrepancy reports.

To date, DoD has developed the data requirements and ICs for the discrepancy report using the ASC X12 Transaction Set 842, Nonconformance Report. No other implementation actions have been completed. Appendix C presents a schedule for accomplishing additional actions.

Payment

The payment area consists of three processes — invoices, carrier payment, and claims.

INVOICES

DFAS, which is responsible for paying all CONUS freight GBLs, uses DTRS to receive invoice and shipment information electronically from carriers and DoD shippers. The Defense transportation community is focusing on increasing the number of EDI-capable carriers and shipping activities, which will expand the use of DTRS.

Even though MSC pays carrier invoices, its use of electronic invoices is only in the planning stage. AMC does not process commercial invoices, however, it has several opportunities to improve its process for recouping transportation costs from the Military Services and Defense agencies.

CARRIER PAYMENT

When invoices are reconciled at DFAS-IN and MSC, carriers can then be paid electronically. DFAS-IN plans to use electronic funds transfer (EFT) to pay carriers beginning in 1996.

CLAIMS

The Military Services and DLA frequently request transportation claims offices to adjudicate claims against carriers when discrepancy occurs on delivery. DoD is converting Standard Form (SF) 361, Transportation Discrepancy Report, to ASC X12 Transaction Set 842, Nonconformance Report. It will use that transaction set to notify carriers and claims offices of discrepancies. Claims offices

use a similar report, SF 362, U.S. Government Freight Loss/Damage Claim, to notify carriers of an obligation to reimburse the government. The potential for EDI in the area of claims has not been fully explored.

KEY PROGRAMS

Expansion of the DTEDI program will directly contribute to the success of several DoD logistics programs. Each of those logistics programs, which are summarized below, will benefit from the implementation of one or more of the 11 projects identified in the previous section. The relationships among the DTEDI projects and the affected logistics programs are illustrated in Table 3-1.

- ◆ *DTEDI program.* Conceived in 1986 by ADUSD-TP, this program calls for the implementation of EDI throughout the Defense Transportation System (DTS). While initially focusing on supporting the electronic payment of GBLs for freight and personal property shipments, it will expand to include using EDI techniques in all transportation processes.
- ◆ *Defense transportation bill of lading electronic payment program.* Identified as the transportation process that would most readily benefit from the use of EDI techniques, this 1987 program serves as the model for expanding EDI capability throughout DTS. It also included the development of DTRS and the use of EFT.
- ◆ *Defense Logistics Management System.* DLMS is part of the overall *Department of Defense Logistics Strategic Plan*. Prescribing the conversion of DLSS from fixed-length data records to variable-length record formats based on the ASC X12 standards, DLMS requires the Defense transportation community to use its transactions by October 1998. A formal implementation schedule is pending.
- ◆ *Department of Defense Logistics Strategic Plan.* The latest version of this plan was published in July 1995. Its goals and objectives call for DoD to reduce logistics cycle times, develop seamless logistics systems, and streamline its logistics infrastructure.
- ◆ *Total asset visibility.* This program recommends numerous enhancements to the supply, transportation, maintenance, and production segments of the logistics pipeline for purposes of achieving TAV over all Defense assets.
- ◆ *Automatic identification technology.* DoD is currently testing various automatic identification technologies (AITs) as a means of identifying the contents of containerized shipments. AIT tagging media need to store standard data sets for documenting the contents of a container, support the transfer of content data to a consignee's supply database, and operate in a variety of user environments. DoD needs to select an AIT media for implementation.

- ◆ *Intransit visibility.* In FY94, DoD developed a plan for achieving ITV of all DoD shipments, unit equipment, and personnel moving throughout DTS. That plan calls for expanded use of automation at all nodes in DTS to capture information on the status on all movements. It also calls for USTRANSCOM to implement GTN as a central repository of all shipment status information. The ITV program will enable operations and logistics users to obtain movement status on shipments at the requisition and national stock number level from supply source to transportation destination.

Table 3-1.
Key Logistics Programs vs. DTEDI Processes

Logistics program	DTEDI project										
	Maintain rates	Movement requests	Rating and routing	Carrier booking	Domestic ship documents	Overseas ship documents	Status information	Discrepancy reports	Invoices	Carrier Payment	Claims
DTEDI	X	X	X	X	X	X	X	X	X	X	X
Bill of lading electronic payment program	X		X		X	X		X	X	X	X
DLMS		X		X	X	X		X	X	X	X
<i>Department of Defense Logistics Strategic Plan</i>				X	X	X	X				
TAV		X			X	X	X				
AIT					X	X	X	X			
ITV		X					X				

SUMMARY

This chapter divides the transportation process into four areas. Within each of those four areas, it identifies 11 business processes that could benefit from EDI techniques. It also identifies seven Defense logistics programs that will realize direct benefits from an expanded DTEDI program.

CHAPTER 4

Personal Property

To be developed at a later date.

CHAPTER 5

Passenger

To be developed at a later date.

CHAPTER 6

EDI Telecommunications Considerations

BACKGROUND

One of the keys to a successful EDI program is the selection of a telecommunications strategy supporting the exchange of EDI transactions. Although many DoD activities will continue to use existing communications networks — such as the Defense Information Systems Network (DISN) or a Military Service or Defense agency network — to exchange EDI transactions internally, those networks cannot be readily used to exchange EDI transactions with commercial trading partners, primarily because of security considerations. In addition, not all DoD activities have access to an existing communications network.

In the private sector, companies make extensive use of commercial EDI value-added networks (VANs) to exchange business information both internally and with their external trading partners. More than 19 commercial concerns — including AT&T, General Electric Information Services, and Advantis (a joint venture of IBM and Sears) — have established EDI VANs that provide a variety of services. Those services include mailboxing that allows trading partners to independently schedule their data exchanges; communications protocol and speed (data-rate) conversions that permit communications among incompatible computers; and recordkeeping that provides audit trails. These and other services simplify communications among EDI trading partners by providing telecommunications processing at an intermediate point, which removes the need for each pair of trading partners to negotiate and conduct telecommunications individually. Commercial EDI VANs have been in use for more than 15 years and currently process approximately 500 million transactions annually.

GENERAL REQUIREMENTS

The DTEDI program requires access to commercial EDI VAN services for DoD activities to exchange data electronically with commercial trading partners and with DoD trading partners that do not have access to a military data network (such as DISN). Those VANs must be capable of satisfying Defense transportation's telecommunications service requirements and its estimated volume of data. (Appendix B describes many of those telecommunications services.)

CURRENT EDI TELECOMMUNICATIONS STRATEGY

Many Defense transportation activities use DISN to exchange EDI data within DoD and an EDI VAN to exchange data with commercial trading partners. Activities without access to DISN, or an equivalent military network, are using Sprint's EDI VAN for all of their EDI data exchanges. That VAN was procured for use by GSA and its trading partners, including DoD. This usage is consistent with the recommendations made in an earlier report.¹ However, GSA's contract with Sprint, and its subsequent extensions, expires on 28 March 1996. As of that date, Defense transportation may be required to use another telecommunications VAN service.

EDI TELECOMMUNICATIONS ALTERNATIVES

Although transportation activities should continue to use DISN when it is available for exchanging EDI data within DoD, they also require access to a commercial EDI VAN. Several alternatives for accessing such VANs are available. They include the following:

- ◆ Use the Federal Acquisition Computer Network (FACNET).
- ◆ Use the EDI VAN services available through the Federal Telecommunication Services (FTS) 2000 contract.
- ◆ Allow each transportation activity (or Military Service and Defense agency) to contract separately for EDI VAN services.
- ◆ Use the EDI VAN service capabilities of the GTN contractor.
- ◆ Use point-to-point high-speed dedicated lines.

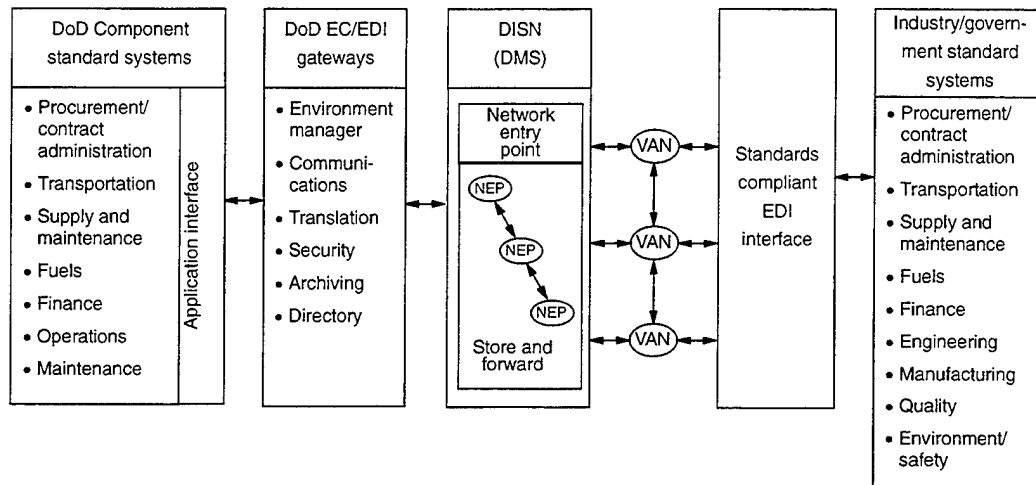
These alternatives are discussed in some detail below.

Federal Acquisition Computer Network

Under FACNET, all EDI transactions exchanged between a DoD activity and its commercial trading partners would be stored and forwarded by network entry points (NEPs) under management of the Defense Information Systems Agency (DISA). Each NEP would be connected to DISN and have the capability to access a number of commercial EDI VANs. (The network collectively formed by the NEPs is referred to as FACNET.) DoD activities would exchange data with their commercial trading partners by transmitting EDI information to FACNET through DISN. Using an electronic directory of EDI VANs, a NEP would access the appropriate VAN and deposit data addressed to a particular

¹LMI Report PL005TR1, *EDI Telecommunications Strategy for Defense Transportation*, Harold L. Frohman, Bruce J. Kaplan, and William R. Ledder, April 1990.

trading partner in its EDI mailbox. The commercial trading partner would then retrieve that data from its EDI mailbox. Commercial trading partners would transmit data to a DoD activity through one of the EDI VANs connected to FACNET. Each NEP would access the EDI VANs regularly to retrieve the data addressed to DoD activities. Using an electronic directory of DoD activities, the NEP would then forward the data to the appropriate DoD activity. Figure 6-1 provides a schematic showing these transactions.²



Note: EC = Electronic Commerce; DMS = Defense Message System.

Figure 6-1.
FACNET EDI VAN Access

DoD currently uses a no-cost license agreement that calls for the VANs to provide EDI services to DoD activities at no cost in exchange for exclusive rights to all Defense transactions. DoD's commercial trading partners are able to contract with any VAN participating in the license agreement.

ADVANTAGES OF FACNET

The primary advantages of using FACNET to centralize the storing, forwarding, and receiving of DoD's EDI transactions to and from commercial EDI VANs are summarized below:

- ◆ *Supports single face to industry.* The use of FACNET establishes one method for industry to communicate with DoD. Standard EDI transactions from FACNET would be transmitted through commercial VANs to DoD's external suppliers in the form they require for automated processing.

²DISA is currently testing a modified version of the schematic depicted in Figure 6-1 for subsequent implementation in a production environment.

- ◆ *Reduces telecommunications costs.* The use of a no-cost license agreement with commercial EDI VANs would minimize DoD's telecommunications costs.
- ◆ *Simplifies EDI VAN connectivity.* By using FACNET to exchange EDI transactions with commercial trading partners, DoD activities would not need to establish connectivity with any EDI VAN. This feature would be of particular value to activities with limited automated data processing support.

DISADVANTAGES OF FACNET

The use of FACNET is not without problems, however. Some of the key disadvantages are described below:

- ◆ *DISA has limited experience with EDI.* Because DISA has few staff members that it can assign to the NEP operations and most of those are not experienced in EDI, the use of FACNET would expose the DoD's EDI initiatives to a high degree of risk.
- ◆ *Cannot support the current volume of procurement transactions.* As a result of its inability to support the limited volume of procurement transactions, FACNET has been reconfigured in an effort to improve throughput. This reconfiguration is particularly risky in a production environment. In addition, FACNET may not be able to accommodate the additional transportation transactions.
- ◆ *NEP investment and operating costs are unknown.* The cost of establishing and operating a production NEP, including personnel and hardware, has not yet been determined. In addition, DISA would probably be required to impose fees on its services.
- ◆ *Effects of no-cost license agreement are unknown.* A no-cost license agreement has not been implemented on a large scale and the willingness of commercial EDI VAN vendors to enter into such an arrangement without increasing fees to Defense transportation's commercial trading partners is unknown.
- ◆ *Requires activities have access to DISN.* Defense transportation activities that are not linked to DISN would not be able to use FACNET.
- ◆ *Does not support transportation needs.* FACNET does not currently support transportation's requirements and presents an unknown risk to the program.
- ◆ *Requires all commercial trading partners to use a participating EDI VAN.* FACNET requires all commercial trading partners to use an EDI VAN that DISA has approved and is participating in the reciprocal no-cost agreement. FACNET would not process data from commercial trading partners that use an unapproved EDI VAN.

- ◆ *Maintenance of EDI VAN directories will be extensive.* Significant DISA personnel resources would be needed to maintain the central electronic directory of commercial trading partners and their EDI VANs.
- ◆ *Does not add value for one-to-one transactions.* For transactions addressed to a specific trading partner, the centralized approach adds no value to the process and would likely result in unnecessary delays and complexity.
- ◆ *May increase risk of technical obsolescence.* DoD has difficulty keeping pace with commercial industry advances in telecommunications standards and technology, particularly in nonmilitary applications. FACNET could become technically obsolete if DoD fails to make the necessary modernization investments.

Federal Telecommunication Services 2000

In the FTS 2000 alternative, each transportation activity would be responsible for subscribing to the EDI VAN services available under the FTS 2000 contract. Currently, all subscribers to the FTS 2000 contract are assigned to one of the two vendors — AT&T or Sprint. Although most DoD users are assigned to AT&T, it does not offer all of the services that the transportation community requires. Most notably, AT&T does not offer transmission control protocol/internet protocol (TCP/IP) connectivity. If activities require services that their assigned vendor does not offer, they may switch to the other vendor, which for DoD activities would be Sprint. The EDI VAN services that Sprint offers under FTS 2000 are the same as those that it offers under the GSA contract. The transmission costs are also identical to those in the current contract. Because most EDI VANs can exchange data with one another through interconnections, commercial trading partners can either retain their current EDI VAN or contract with other VANs, including those used by their DoD trading partners. (Figure 6-2 shows a schematic of this alternative.)

ADVANTAGES OF FTS 2000

The advantages of using the FTS 2000 contract to access EDI VAN services are numerous. They include the following:

- ◆ *No major investment required.* DoD activities do not need to make major investments in hardware. When using a VAN to exchange EDI transactions with trading partners, only a modem and communications software are typically required to access the VAN.
- ◆ *Rapid implementation.* The EDI VAN services currently provided under GSA's contract with Sprint would also be available under the FTS 2000 contract, so DoD activities would not need to change their software and hardware.

- ◆ *Easy to resolve EDI transmission problems.* Transmission problems are easy to diagnose and resolve when individual VANs are involved. The VAN developer typically assists in identifying the problems and, in many cases, resolves them by restoring the contents of the EDI user's mailbox.
- ◆ *Supports all DoD activities.* The use of an EDI VAN would enable activities that do not have access to DISN or another DoD network to have a telecommunications capability.
- ◆ *Maintains "state-of-the-art" capabilities.* To remain competitive, commercial EDI VANs tend to routinely incorporate technological advancements into their networks. Using a commercial EDI VAN would permit DoD to take full advantage of the latest technologies.

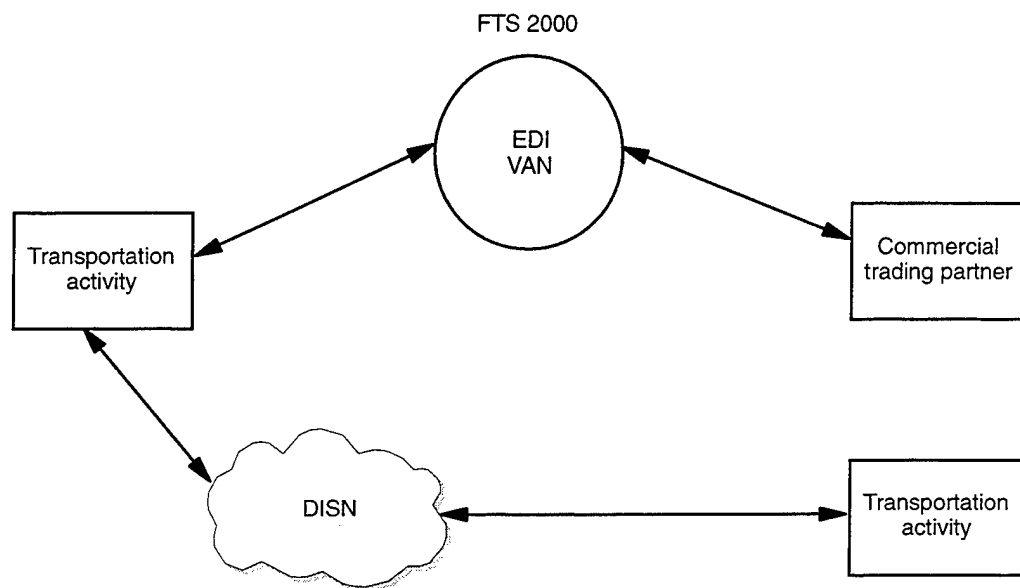


Figure 6-2.
FTS 2000 and Commercially Procured EDI VAN Access

DISADVANTAGES OF FTS 2000

This alternative also has three primary disadvantages, which are described below:

- ◆ *Modifications to the contract are difficult.* Modifying the FTS 2000 contract to augment existing EDI VAN services would be difficult and time-consuming.
- ◆ *Contract is nearing expiration.* The FTS 2000 contract is scheduled for expiration in late 1998, which would make this alternative an interim solution.

- ◆ *Rates are unknown.* Although Sprint's EDI VAN service rates will remain the same under FTS 2000, the rate structure for AT&T's EDI services are unknown.

EDI VAN Procurement

With the exception of rapid implementation, procuring an EDI VAN has many of the same advantages as using the FTS 2000 contract. However, this alternative also has the following disadvantages:

- ◆ *Lengthy procurement process.* Procuring an EDI VAN requires considerable time to develop the statement of work and associated paperwork. The entire process through contract award could take 18 months or longer.
- ◆ *Changing EDI VANs is difficult.* The replacement of EDI VANs when an existing contract expires is a difficult, time-consuming process. As a result, it would require a great deal of advance planning and extensive coordination with commercial trading partners.
- ◆ *The telecommunications costs are unknown.* Procuring a new EDI VAN will result in a new set of rates, making it difficult for transportation activities to request future telecommunications funding that would satisfy their requirements.

GTN Contractor's EDI VAN Services

The GTN project will require EDI VAN services to support the exchange of data between DoD activities and their commercial trading partners. However, the EDI VAN service capabilities of the GTN contractor are unknown, as are the availability of those services for broader Defense transportation use. As a consequence, the specific advantages and disadvantages of this alternative cannot be determined without further investigation.

Point-to-Point High-Speed Dedicated Lines

The volume of EDI transactions exchanged between some DoD and government trading partners will probably warrant the establishment of direct communication links between the partners. Those high-speed dedicated lines would be in lieu of using EDI VAN services to exchange EDI formatted data. As DoD's experience with EDI grows and the associated telecommunications volumes increase, additional activities will likely pursue direct communications.

3ADVANTAGES

The primary advantages of using dedicated lines are discussed below:

- ◆ *Lower telecommunications costs.* The cost of a dedicated line is fixed regardless of the data transmission volumes. If transmission volumes regularly exceed the break-even point for using an EDI VAN, trading partners would realize monthly telecommunications savings.
- ◆ *Faster transmissions.* Transmissions between participating trading partners will likely occur faster because the intermediate processing of the transaction will not occur.

DISADVANTAGES

Using a dedicated line between trading partners possesses two primary disadvantages, which are described below:

- ◆ *Requires additional communications expertise.* Establishing direct communications requires a higher level of communications expertise that may not be available to all interested trading partners.
- ◆ *No value-added services.* A dedicated line does not take advantage of the value-added services offered by EDI VANs. Some of the most useful VAN services are mailbox restoration in the event of lost data, troubleshooting, and audit trails.

ISSUES

Before a long-term telecommunications strategy for Defense transportation's EDI program can be developed, several issues need to be resolved. Those actions are discussed below:

- ◆ *DoD's long-term EDI telecommunications policy needs to be defined.* Although FACNET is frequently referred to as the system that all DoD activities will use to exchange data with the commercial sector, a policy to that effect has not been published. In addition, DoD has not addressed alternatives to its long-term strategy if FACNET cannot satisfy the requirements of a particular functional area.
- ◆ *FACNET may not satisfy DTEDI committee's requirements.* FACNET has been developed to satisfy DoD's procurement and operational requirements, not its transportation requirements. If FACNET is to be the key component of DoD's EDI telecommunications strategy, then the Defense transportation community needs to work with DISA to develop a functional requirements document that can be used to validate a proposed telecommunications strategy.
- ◆ *Long-term requirements of the DTEDI program are unknown.* With the exception of GBLs and associated transaction sets, the DTEDI program's long-term EDI operating requirements are still being developed. In

addition, the impact of DoD's ITV program on those requirements is also evolving. As part of its EDI telecommunications plan, which is called out in Chapter 2, the Defense transportation community needs to identify its long-term functional, operational (e.g., technical), and data-volume requirements.

- ◆ *Defense transportation needs to identify an interim EDI telecommunications strategy.* The DTEDI program's current telecommunications strategy uses Sprint's EDI VAN services procured under a GSA contract. However, extensions to that contract expire in March 1996. DISA will probably not have implemented an EDI VAN access strategy that satisfies transportation's requirements by that date. As a consequence, the Defense transportation community needs to identify and implement an interim telecommunications strategy until it can formulate one that meets its long-term requirements.
- ◆ *Defense transportation needs to select the least-risk EDI telecommunications alternative.* Defense transportation's bill of lading electronic payment program currently operates in a production environment, so it cannot switch to an unproven EDI telecommunications strategy. The DTEDI program needs to embrace both an interim and long-term strategy that offers the lowest risk to its current EDI initiatives.

SUMMARY

The current EDI telecommunications solution satisfies the DTEDI program's requirements for its GBL payment program. However, the GSA EDI VAN contract with Sprint expires in March 1996, and the Defense transportation community needs to select a replacement strategy. It also needs to develop better estimates of its long-range EDI requirements, including those deriving from related efforts, such as ITV. This chapter presents some alternatives for the Defense transportation community to consider when formulating a long-term telecommunications strategy; it also addresses various issues that must be considered when developing such a strategy.

APPENDIX A

ASC X12 Transaction Sets

This appendix identifies many of the electronic data interchange (EDI) transaction sets that are planned for use in Defense transportation's EDI (DTEDI) program. Table A-1 lists the formal titles of those transaction sets. For a more detailed understanding of the transactions sets, see Volume 1, Accredited Standards Committee (ASC) X12, Version Release 003050. Table A-2 lists each DTEDI trading partner and the ASC X12 transaction sets that they will use to exchange data.

Table A-1.
ASC X12 Transaction Sets

Transaction set number ^a	Title
110	X12.100 Air Shipment Information
204	X12.103 Motor Carrier Shipment Information
210	X12.104 Motor Carrier Freight Details and Invoice
213	X12.105 Motor Carrier Shipment Status Inquiry
214	X12.106 Transportation Carrier Shipment Status Message
300	X12.109 Reservation (Booking Request) (Ocean)
301	X12.109 Confirmation (Ocean)
303	X12.110 Booking Cancellation (Ocean)
304	X12.113 Shipping Instructions
309	X12.117 U.S. Customs Manifest (Ocean)
310	X12.118 Freight Receipt and Invoice (Ocean)
312	X12.119 Arrival Notice (Ocean)
315	X12.122 Status Details (Ocean)
353	X12.132 U.S. Customs Events Advisory Details
355	X12.134 U.S. Customs Manifest Rejection
410	X12.139 Rail Carrier Freight Details and Invoice
421	X12.261 Estimated Time of Arrival and Car Scheduling
422	X12.262 Shipper's Car Order
511	X12.225 Requisition
602	X12.126 Transportation Services Tender
820	X12.4 Payment Order/Remittance Advice
824	X12.44 Application Advice
842	X12.21 Nonconformance Report

^a 997 X12.20 Functional Acknowledgment is used throughout the Defense transportation system.

Table A-1.
ASC X12 Transaction Sets (Continued)

Transaction set number ^a	Title
850	X12.1 Purchase Order
856	X12.10 Ship Notice/Manifest
858	X12.18 Shipment Information
859	X12.55 Freight Invoice
864	X12.34 Text Message
920	X12.174 Loss or Damage Claim — General Commodities
925	X12.176 Claim Tracer
926	X12.177 Claim Status Report and Tracer Reply
990	X12.180 Response to a Load Tender
994 ^b	File Transfer (used for Transportation Services Tender Acceptance/Rejection and bill of lading application error reporting)

^a 997 X12.20 Functional Acknowledgment is used throughout the Defense transportation system.

^b Not approved by ASC X12; it is a Transportation Data Coordination Committee (TDCC) standard.

Table A-2.
DTEDI Trading Partner Transaction Sets

Trading partner	Transaction set															
	110	204	210	213 ^a	214 ^a	300	301	304	309	310	312	315	353	355	410	421
Supply office																
Shipper		X		X	X	X	X									X
CCP																
POE					X			X				X				
POD					X			X	X		X	X	X	X		
BBP					X							X				
Consignee					X							X				
MTMC (CFM)				X	X											
DFAS-IN	X		X	X	X										X	
Carrier	X	X	X		X	X	X			X		X			X	X
Clearance authority																
USTRANSCOM (GTN)					X							X				
GSA			X													
Commercial banks																
AMC																
MSC									X	X	X					
DAAS																

Trading partner	Transaction set														CTX ^c	Other ^d
	422	511	602 ^a	820	824 ^a	842	850	856	858 ^a	859	864 ^a	990	994 ^{a,b}			
Supply office		X					X									
Shipper	X	X	X		X	X	X		X			X	X		X	
CCP						X			X						X	
POE						X		X	X						X	
POD						X		X	X						X	
BBP						X									X	
Consignee						X			X						X	
MTMC (CFM)			X		X			X	X		X		X			
DFAS-IN				X		X			X	X				X	X	
Carrier	X		X	X	X	X			X	X	X	X	X		X	
Clearance authority									X	X						
USTRANSCOM (GTN)								X	X							
GSA			X	X					X	X						
Commercial banks				X										X		
AMC			X													
MSC			X						X							
DAAS								X								

Notes and Footnotes to Table A-2

Note: CCP = container consolidation point; POE = port of embarkation; POD = port of debarkation; BBP = break-bulk point; MTMC = Military Traffic Management Command; CFM = CONUS Freight Management; DFAS-IN = Defense Finance and Accounting Service – Indianapolis Center; USTRANSCOM = United States Transportation Command; GTN = Global Transportation Network; GSA = General Services Administration; AMC = Air Mobility Command; MSC = Military Sealift Command; DAAS = Defense Automatic Addressing System.

^aTransaction that the Defense transportation community uses in several functional areas; it is described in separate DoD implementation conventions.

^bTransaction Set 994 is a TDCC transaction; DoD plans to replace it with an ASC X12 transaction.

^cCTX, or Corporate Trade Exchange, is an electronic funds transfer format recognized by the National Automated Clearing House Association.

^dOther transaction sets to support future operating concepts.

APPENDIX B

Required EDI VAN Services

This appendix identifies and defines the services that the Defense transportation's electronic data interchange (DTEDI) program requires of an EDI value-added network (VAN). It classifies VAN services into seven categories: data processing; transmission, access, and protocol; security; survivability; operational facilities; report facilities; and customer support. The services described below are derived from an analysis of Department of Defense (DoD) experiences in testing and implementing EDI applications.

DATA PROCESSING

To support the electronic mailboxing and translation requirements of DoD trading partners, a VAN needs to provide the following services:

- ◆ *Mailbox deposit capability.* The ability to electronically store, retrieve, and forward EDI business documents for trading partners in electronic mailboxes located on a host computer. The amount of storage allocated to each mailbox should be unlimited.
- ◆ *Translation output conversion.* The capability to convert Accredited Standards Committee (ASC) X12; Transportation Data Coordinating Committee (TDCC); Uniform Communications Standard (UCS); and Electronic Data Interchange for Administration, Commerce, and Transport (EDIFACT) encoded EDI transactions into non-EDI formats and transmit them to facsimile machines, printers, electronic mail destinations, or magnetic storage media.
- ◆ *Translation service.* The translation of EDI documents by an EDI VAN using either ASC X12, TDCC, UCS, or EDIFACT standards, including the current and prior two versions of the standard.

TRANSMISSION, ACCESS, AND PROTOCOL

An EDI VAN is the information pipeline between two or more trading partners. As such, it needs to simplify the process of connecting different computers, and once established, maintain a problem-free and virtually transparent link

between them. In order to effectively perform this critical mission, a VAN needs to provide the following services:

- ◆ *Third-party interconnection.* A network interconnection acknowledgment that is sent when data are sent to or received from an interconnected third-party network. The acknowledgment includes the transmission status and the date and time stamp for audit trail purposes. The VAN should use the TA1 or TA3 segment, or, at a minimum, the X12.56 interconnect mailbag control structure.
- ◆ *Encrypted data transmission.* The capability to transmit EDI documents that have been encrypted by either the sender or receiver.
- ◆ *Immediate processing.* The capability to process EDI transactions immediately so that the intended recipient can retrieve the message as soon as possible.
- ◆ *Error-checking telecommunications protocol.* The transmission of EDI documents using an error-checking telecommunications protocol.
- ◆ *Immediate connection.* The capability to immediately establish a connection with a trading partner upon request and to send or receive data.
- ◆ *International standards and protocols.* The capability to support EDIFACT and the X.400 electronic message.
- ◆ *Transmission control protocol/internet protocol.* The capability to support the transmission control protocol/internet protocol (TCP/IP) that the majority of Defense transportation activities use.
- ◆ *Line speed conversion.* The capability to support and convert multiple line speeds, including 2,400, 9,600, 14,400, and 19,200 bits per second.
- ◆ *Multiple communications protocol conversion.* The capability to support asynchronous; bisynchronous; Defense Information Systems Network (DISN) basic X.25; and system network architectures.
- ◆ *Time-based dial-out.* The capability to schedule a dial-out session with a VAN customer (trading partner) to deliver and receive data.
- ◆ *Toll-free EDI VAN access.* The capability to be accessed using a local or nationwide toll-free telephone call.

SECURITY

To support current and future Defense transportation EDI projects, especially those involving financial and strategic information, a VAN needs to provide the following services:

- ◆ *Encryption and authentication.* The capability to encrypt and authenticate data using DoD standards.
- ◆ *Controlled VAN access.* The capability to secure access from unauthorized personnel; to institute security precautions, such as automatic termination of access after repeated password violations; and to maintain a log of all personnel granted access.

SURVIVABILITY

Because the DTEDI program is critical to the mission of the Military Services and Defense agencies, the EDI VAN needs to be capable of operating during times of national crisis or natural disaster. To ensure that telecommunications support is uninterrupted during such times, a VAN needs to provide the services described below:

- ◆ *Backup systems.* The ability to maintain "hot standby" backup systems in the event the host computer fails.
- ◆ *Disaster recovery plan.* A documented procedure that permits the ongoing processing of EDI transactions when the host computer fails.
- ◆ *Network redundancy.* The automatic use of alternative routes within the telecommunications network when the network fails.
- ◆ *Uninterruptable power supply.* The availability of an uninterruptable power supply for the host computer, its backup systems, and all network hardware in the event of an electrical power failure.

OPERATIONAL FACILITIES

In support of daily operations of the DTEDI program, a VAN needs to provide the following data recovery services and test facilities:

- ◆ *Data recovery.* The ability to restore EDI transactions to a mailbox for at least seven days after the origination of the transaction, typically at no additional cost.

- ◆ *Test facilities.* The availability of facilities for testing hardware, software, and telecommunications protocols with multiple trading partners and networks; mailboxes should be available for testing new transaction sets independently of the production environment.

REPORT FACILITIES

Because it needs to manage daily telecommunications traffic and forecast future telecommunications requirements, the Defense transportation community needs to monitor its usage of VANs. Consequently, a VAN needs to provide the following management information:

- ◆ *Transaction status history.* The ability to provide transaction status messages, including date and time stamps, throughout the life cycle of inbound and outbound transactions, stored on-line for a minimum of 30 days and off-line for 6 to 12 months.
- ◆ *Usage statistics.* The availability of network usage statistics reports and network bills by document type, date, peak and off-peak usage times, character count, trading partner, number of transactions sent and delivered, password, and user.

CUSTOMER SUPPORT

As trading partners initiate new telecommunications links, manage existing links, and execute daily transmissions, they need access to customer support and other customer-related services. To support the Defense transportation EDI end-user, a VAN should provide the following services:

- ◆ *Customer support hotline.* The availability of customer service personnel for problem discussion and resolution 24 hours a day through a nationwide toll-free telephone number; call back should be within 1 hour.
- ◆ *Lost data or delayed delivery notification.* The capability to notify, by telephone, the sending trading partner that data have been lost or their delivery has been delayed.
- ◆ *Installation support.* The availability of training, consultation, and documentation for installation and set-up of EDI VAN access.

APPENDIX C

Freight EDI Program: Operating Concepts and Schedules

This appendix presents the operating concepts and schedules for expanding the Defense transportation electronic data interchange (DTEDI) program. Building upon the four categories of electronic data interchange (EDI) opportunities introduced in Chapter 3 (tender submission, planning, movement, and payment) and their corresponding processes, this appendix proposes operating concepts and implementation schedules for 15 EDI projects. Table C-1 lists those projects by category and process. (Note that the first process — tender submission— is broken out into three subprocesses, with each having a separate project.) It also indicates the current status of each project and the page where it is addressed in this appendix.

Table C-1.
DTEDI Implementation Plan

Category/process/project	Status	Page
Tender submission		C-2
Guaranteed traffic	In progress	C-2
Voluntary/negotiated tenders	Operational	C-4
Overseas rate agreements	Evaluating	C-4
Planning		C-6
Movement requests	Evaluating	C-6
Routing and rating	Evaluating	C-8
Carrier booking	Evaluating	C-10
Movement		C-12
Domestic shipment documents		C-12
GBLs to finance centers	Testing	C-12
CBLs to finance centers	Planned	C-14
Bill of lading information to carriers, consignees, and others	Evaluating	C-16
Overseas shipment documents	Evaluating	C-18
Status information	Planned	C-22
Discrepancy reports	Evaluating	C-24
Payment		C-26
Invoices	Testing	C-26
Carrier payment	Planned	C-28
Claims	Evaluating	C-30

TENDER SUBMISSION

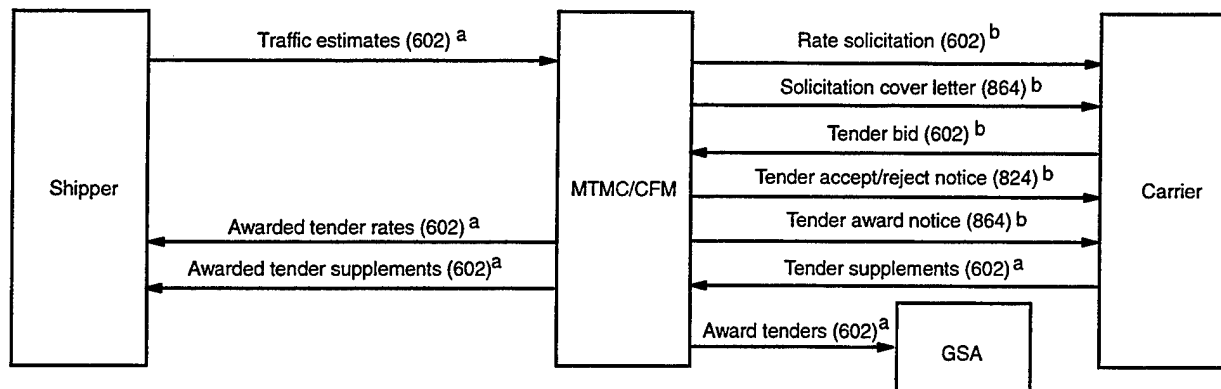
Under the category of tender submission, the plan calls for the United States Transportation Command (USTRANSCOM), through its Transportation Component Commands (TCCs), to automate the transportation rate filing process in each of three project areas: guaranteed traffic (GT), voluntary/negotiated tenders, and overseas rate agreements.

Guaranteed Traffic

Providing rates for nearly 80 percent of all domestic Defense transportation freight movements, DoD's guaranteed traffic (GT) initiative seeks to automate the processing of nearly 9,000 complex rate tenders and the pre-positioning of rates at shipping activities. In this project, the Military Traffic Management Command (MTMC) would develop an automated system to generate electronic rate solicitations, receive electronic bids, evaluate and award the bids, and electronically distribute GT rates to CONUS Defense shipper systems.

OPERATING CONCEPT

The operating concept for this project (see Figure C-1) calls for three trading partners (shipper, MTMC, and carrier) to develop EDI capabilities that support the exchange of several transactions. MTMC completed the automation of its in-house operations with the delivery of the GT Standard Tender Electronic Processing (GT*STEP) in 1994. In March 1996, MTMC plans to field the automated interface between GT*STEP and commercial carrier systems. That interface requires carriers to receive an electronic solicitation of rates from MTMC, complete the solicitation, and return it to MTMC for evaluation and award. In the future, MTMC will develop interfaces with DoD shipping activities for providing electronic GT rates to shippers systems. The shippers will use those GT rates to automatically calculate transportation charges for government bill of lading (GBL) and commercial bill of lading (CBL) shipments.



Note: The numbers in parentheses indicate the Accredited Standards Committee (ASC) X12 transaction set that would support the transaction. CFM = CONUS Freight Management system; GSA = General Services Administration.

^aImplementation schedule to be determined.

^bSee implementation schedule for Phase III shipper interface in Figure C-2 below.

Figure C-1.
Guaranteed Traffic Tender Operating Concept

IMPLEMENTATION PLAN AND SCHEDULE

Figure C-2 shows the schedule MTMC is following to implement this project. The project consists of three phases, with only Phase I complete.

Task	1994		1995				1996				1997	
	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr
Phase I - Develop MTMC system		▲										
Phase II - Develop carrier interface		■	■	■	■	■	■	■				
Phase III - Develop shipper interface								■	■	■	■	■
1.0 Finalize operating concept												
2.0 Coordinate implementation plan with trading partners												
3.0 Design trading partner system enhancements												
4.0 Develop software												
5.0 Test system												
6.0 Field production system												

Figure C-2.
Guaranteed Traffic Project — Implementation Schedule

Voluntary/Negotiated Tenders

In 1992, MTMC completed the automation of its voluntary/negotiated tender process. The resulting system — CFM — receives rates electronically using ASC X12 Transaction Set 602, Standard Tender of Freight Services. More than 100 commercial carriers are now exchanging rates with MTMC under this project.

OPERATING CONCEPT

In the operating concept illustrated in Figure C-3, carriers voluntarily submit electronic rates to MTMC, which then checks the rates for compliance. If the rates are accepted, they are made available to Defense shippers. If the rates are rejected, carriers are permitted to resubmit them. All accepted rates are forwarded to GSA for use in performing a postpayment audit of GBLs. Although not yet scheduled, MTMC plans to examine the requirement to forward voluntary rates to shippers.

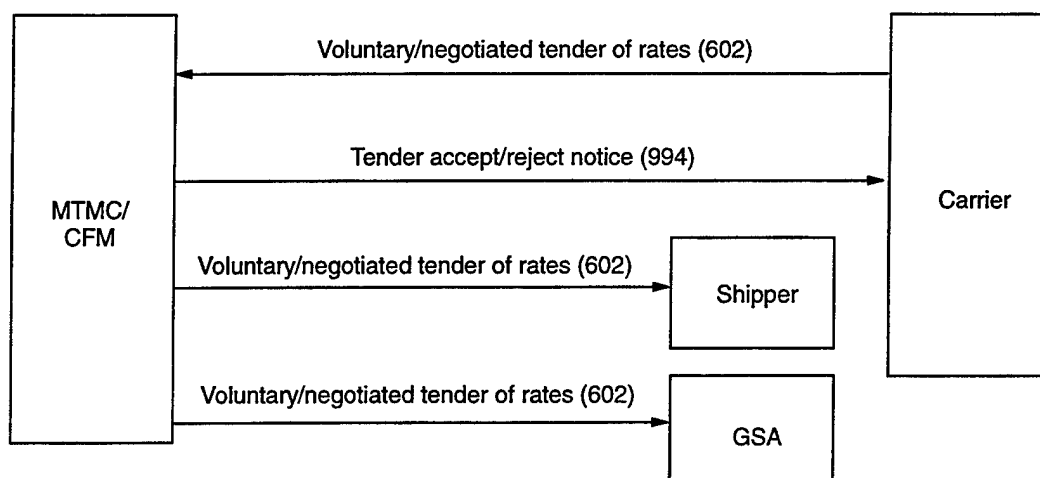


Figure C-3.
Voluntary/Negotiated Tenders Operating Concept

SCHEDULE

MTMC completed this project in 1992, but continues to expand it to include new carrier trading partners.

Overseas Rate Agreements

Both the Military Sealift Command (MSC) and Air Mobility Command (AMC) maintain rates for moving freight using commercial carriers. MSC's rates are container and break-bulk rate agreements with ocean carriers, while AMC's

are contract rates for airlift. Unlike MTMC's GT rates for freight, MSC's and AMC's rates are governed by the Federal Acquisition Regulation (FAR) and the Defense Federal Acquisition Regulation (DFAR).

When they evaluate the prospects of implementing EDI, MSC and AMC need to consider the following issues:

- ◆ What is the priority for reengineering their current processes?
- ◆ What are the benefits of automating the overseas rate agreement processes?
- ◆ Would trading partners be willing to change the way they do business?
- ◆ What are the legal ramifications of using EDI to perform FAR and DFAR acquisitions?

OPERATING CONCEPT

Because neither MSC nor AMC has considered the application of EDI techniques to their overseas rate agreement processes, an operating concept is not possible until they complete the project evaluation effort described below.

PROJECT EVALUATION SCHEDULE

Figure C-4 provides a project evaluation schedule that should result in a plan to implement EDI for processing overseas rate agreements. MSC and AMC need to determine the earliest possible dates they could begin the required evaluations.

Task	Number of months					
	1	2	3	4	5	6
1.0 Identify trading partners and systems						
2.0 Finalize operating concept						
3.0 Assess benefits of implementing EDI techniques						
4.0 Develop implementation plan						

Figure C-4.
Overseas Rate Agreements Project — Evaluation Schedule

PLANNING

Under the planning category, this plan calls for supply activities, shippers, transportation component commands (TCCs), and carriers to implement EDI in three separate projects: movement requests, routing and rating, and carrier booking. These projects are described in more detail below.

Movement Requests

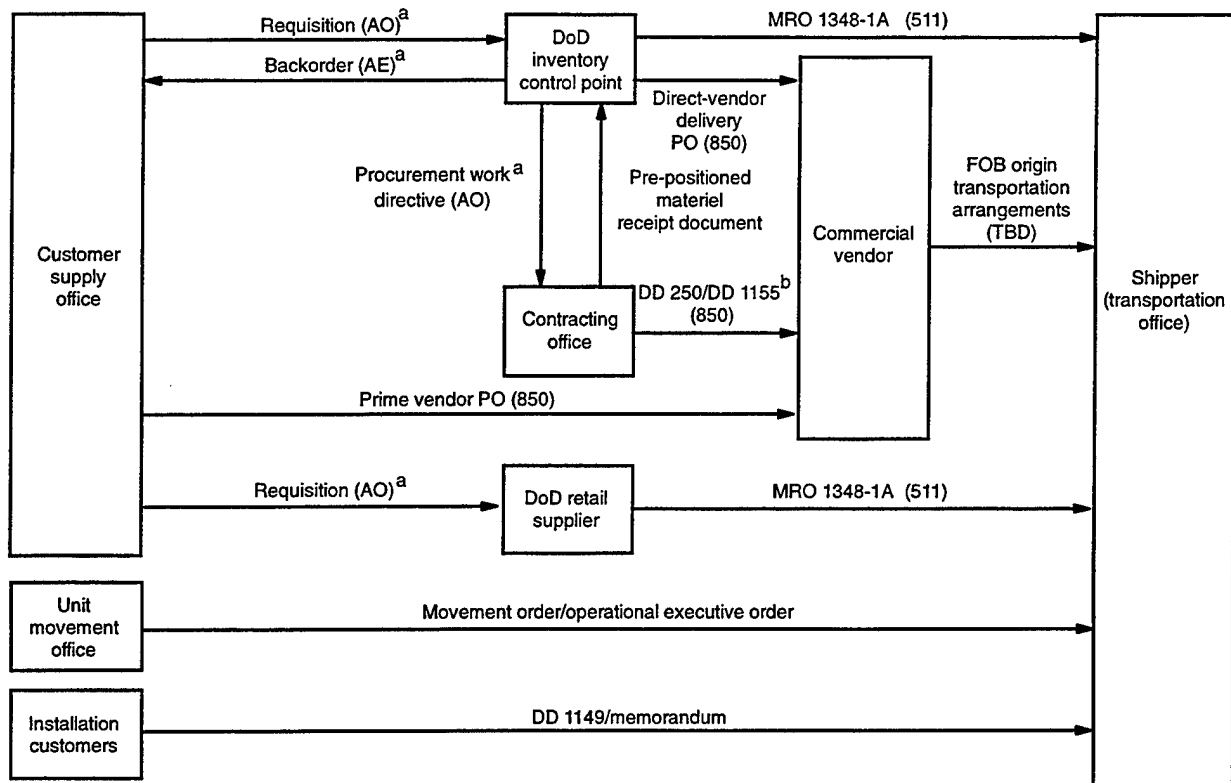
When moving materiel within the Defense Transportation System (DTS), a Defense activity submits a movement request to the transportation officer at a depot or installation. The transportation officer enters the shipment into its transportation planning system, which sorts and combines shipments with others by mode and destination. Currently, wholesale materiel management systems exchange electronic material release orders (MROs) with wholesale distribution systems using Defense Logistics Standards System (DLSS) transactions, while installation transportation systems rely on the paper MRO Form 1348-1A or other paper movement requests. The DLSS transactions are scheduled to be replaced by the new Defense Logistics Management Standards (DLMS) formats by October 1998. A schedule for converting from paper to electronic transactions has not been established.

OPERATING CONCEPT

As Figure C-5 illustrates, three categories of customers may request transportation services:

- ◆ *DoD supply activity.* Generates a requisition and forwards it to an inventory control point (ICP) or retail supply office. The ICP or retail supply office then prepares the MRO (DLMS Transaction Set 511, Requisition) and passes it to the appropriate transportation office, where it is uploaded to a shipment planning system. When a supply activity and ICP order materiel from a vendor, they either submit a procurement work directive through a Defense contracting office or place purchase orders directly with the vendor. When a vendor is responsible for filling orders, it arranges transportation services through a Defense transportation office for free-on-board (FOB) origin shipments or ships the orders as FOB destination.
- ◆ *Unit move office.* Prepares a movement order and submits it to the appropriate transportation office.
- ◆ *Installation customers.* Requests general transportation services using means other than requisitions or unit movement orders; prepares a DD 1149, memorandum, or other correspondence, and submits it to the local transportation office.

This operating concept needs to be finalized, which is the first step in this project.



Note: AO = Military Standard Requisitioning and Issue Procedures (MILSTRIP) Requisition Card; AE = MILSTRIP Supply Status Card; PO = purchase order; TBD = to be determined.

^aDLSS formats, which are outside the transportation process.

^bDD 250 = Material Inspection and Receiving Report; DD 1155 = Order for Supplies and Services.

Figure C-5.
Movement Requests Operating Concept

IMPLEMENTATION PLAN AND SCHEDULE

Figure C-6 shows a schedule for implementing the DLMS Transaction Set 511, Requisition. Because the Defense Logistics Management Standards Office (DLMSO) still needs to establish a final implementation plan for the DLMS Version 2.0 standards, this schedule displays only estimated durations for each major task in the implementation process. When DLMSO finalizes its schedule for DLMS Version 2.0, the affected supply and transportation systems can calculate a "latest possible" start date by subtracting the durations of the tasks shown in Figure C-6 from the projected end date of the DLMS 2.0 timeline.

Task	Number of quarters					
	1	2	3	4	5	6
1.0 Develop functional requirements	■					
1.1 Finalize operating concepts						
1.2 Detail data requirements						
1.3 Identify and resolve business and legal issues						
2.0 Review EDI standards and conventions	■	■	■	■		
2.1 Map data requirements						
2.2 Modify ASC X12 transaction sets						
2.3 Prepare implementation conventions						
3.0 Specify technical operating requirements	■	■				
3.1 Review and complete hardware specifications						
3.2 Identify software requirements						
3.3 Establish telecommunications strategy						
4.0 Integrate and test system			■	■	■	
4.1 Procure and install hardware and software						
4.2 Modify application systems						
4.3 Develop interface programs						
4.4 Arrange for telecommunications						
4.5 Update operating procedures						
4.6 Train operators						
4.7 Test, evaluate, and modify system						
5.0 Implement production system						▲

Figure C-6.
Movement Requests Project — Implementation Schedule

Routing and Rating

As detailed in the Tender Submission section of this appendix, MTMC plans to electronically forward both GT and voluntary rates to shippers. As a consequence, only shippers that are incapable of storing rates need to implement this project.

OPERATING CONCEPT

In the operating concept illustrated in Figure C-7, the shipper has already planned the movement of materiel and generated information describing the shipment. It then submits the shipment information in a routing request to MTMC using the ASC X12 Transaction Set 858, Shipment Information. (The shipper can request a preference for a specific mode of transport.) Upon receiving the routing request, MTMC identifies a list of carriers along with their rates and returns that information to the shipper in a route order or traffic release transaction set. The shipper then uses that information to select a carrier.

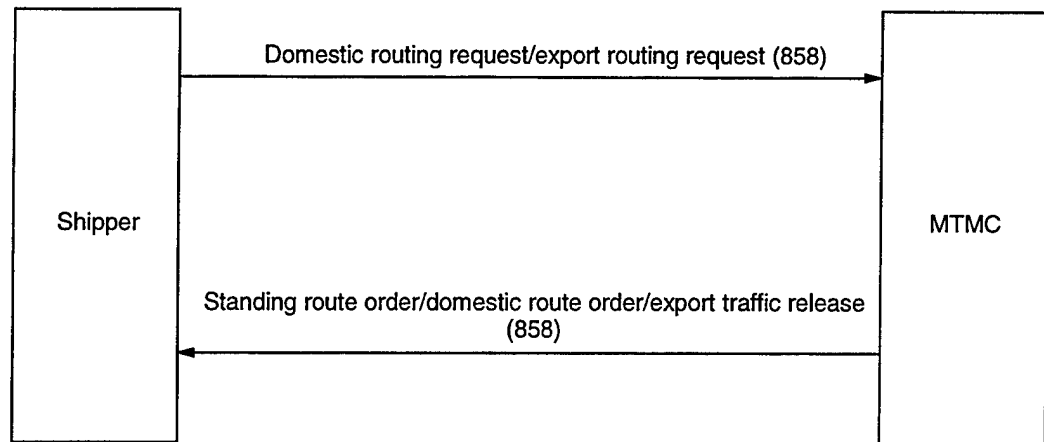


Figure C-7.
Routing and Rating Operating Concept

IMPLEMENTATION PLAN AND SCHEDULE

MTMC has already defined the data requirements for the routing request and route order/traffic release transactions. It also has selected the ASC X12 Transaction Set 858, Shipment Information, to support the exchange of that data with DoD shipping activities. When it selects a start date for this project, MTMC could use the schedule shown in Figure C-8 to complete the project.

Task	Number of months							
	1	2	3	4	5	6	7	8
1.0 Develop functional requirements	■	■						
1.1 Finalize operating concepts ^a								
1.2 Detail data requirements ^a								
1.3 Identify and resolve business and legal issues ^a								
2.0 Review EDI standards and conventions								
2.1 Map data requirements ^a								
2.2 Modify ASC X12 transaction sets ^a								
2.3 Prepare implementation conventions		■	■	■	■			
3.0 Specify technical operating requirements								
3.1 Review and complete hardware specifications ^a								
3.2 Identify software requirements		■	■					
3.3 Establish telecommunications strategy			■	■	■			
4.0 Integrate and test system								
4.1 Procure and install hardware and software			■	■	■	■		
4.2 Modify application systems			■	■	■	■		
4.3 Develop interface programs					■	■	■	
4.4 Arrange for telecommunications ^a								
4.5 Update operating procedures						■	■	■
4.6 Train operators								
4.7 Test, evaluate, and modify system								■
5.0 Implement production system								

^aIndicates the task is complete.

Figure C-8.
Routing and Rating Project — Implementation Schedule

Carrier Booking

Except for a container booking prototype that MTMC developed for its Integrated Booking System (IBS), no other shipper or port system incorporates an electronic booking capability. Today, most shippers schedule appointments and book freight using either telephones or facsimile equipment. Both methods enable shippers to maintain close contact with their carriers. Before converting DoD's current manual booking process to EDI, USTRANSCOM needs to assess the impact that electronic booking will have on the current business environment and associated processes. In so doing, it needs to address the following questions.

- ◆ What is the priority for reengineering the current processes?
- ◆ What are the benefits of automating the carrier booking process?

- ◆ Would the trading partners be willing to change the way they do business?
- ◆ Would conversion to EDI have an adverse effect on business relations between shippers and carriers?

OPERATING CONCEPT

Each commercial transportation mode currently uses its own suite of EDI transactions to schedule appointments, book freight, and confirm and cancel bookings. The operating concept in Figure C-9 calls for the shipper and port of embarkation (POE) to initiate the booking process, with the carrier confirming the appointment. In October 1995, the motor carrier industry began to define its practices for scheduling, updating, and canceling appointments. Before implementing this project, the Defense transportation community needs to analyze carefully the current and future technical operating environment.

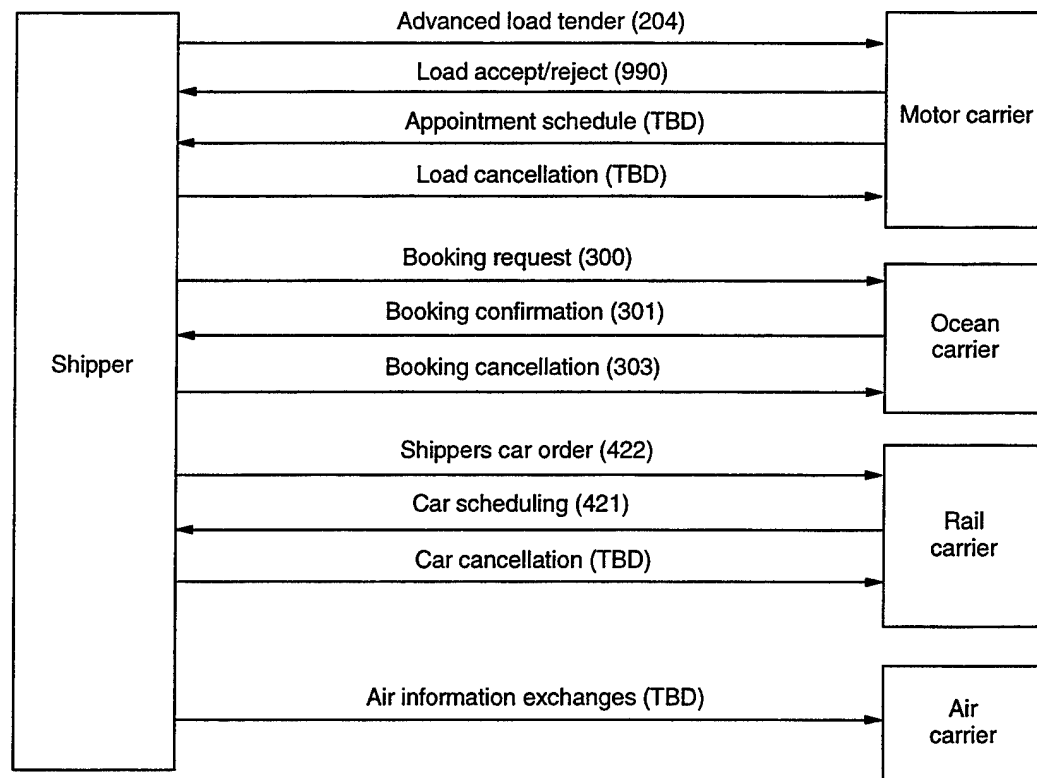


Figure C-9.
Carrier Booking Operating Concept

PROJECT EVALUATION AND SCHEDULE

Figure C-10 provides a list of tasks leading to the development of an EDI booking system. When the Defense transportation community determines a

start date for the project, this figure could be used to develop specific dates and milestones for completing the required evaluation.

Task	Number of months					
	1	2	3	4	5	6
1.0 Identify trading partners and systems						
2.0 Finalize operating concept						
3.0 Assess benefits of implementing EDI techniques						
4.0 Develop implementation plan						

Figure C-10.
Carrier Booking Project — Evaluation Schedule

MOVEMENT

The movement category is divided into four processes: domestic shipment documents, overseas shipment documents, status information, and discrepancy reports. These processes and the individual projects within each are described in the remainder of this section.

Domestic Shipment Documents

The domestic shipment documents project is divided into two subprojects: bills of lading from shipper to finance center and bills of lading from shipper to carriers, consignees, and others.

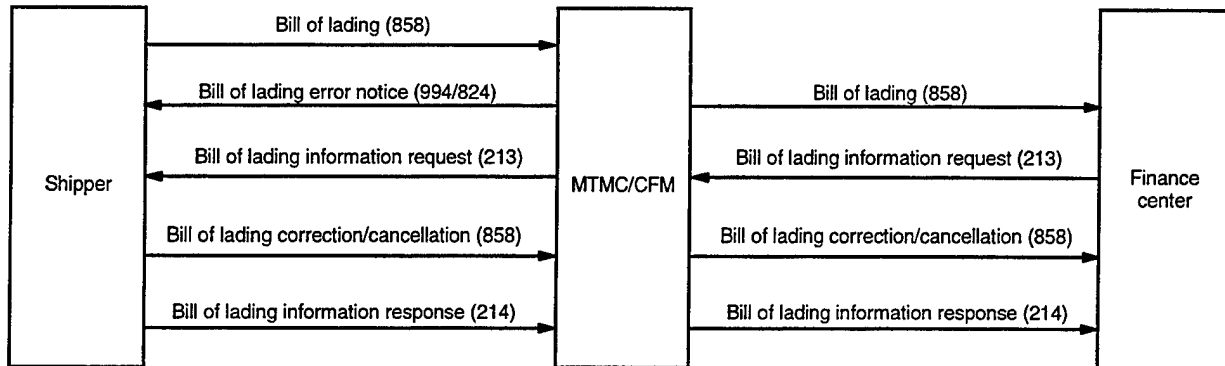
BILLS OF LADING FROM SHIPPER TO FINANCE CENTER

The Defense transportation community divides this subproject into two business areas: electronic GBLs and electronic CBLs.

Operating Concept

Figure C-11 shows an operating concept for exchanging both GBLs and CBLs with finance centers. The shipper generates an electronic bill of lading record and passes it to MTMC, which performs data quality edits on the information. If MTMC detects any errors, it transmits an error notice asking the shipper to correct and retransmit the bill of lading. When the bill of lading passes the edits, MTMC forwards the electronic bill of lading to the appropriate finance center. This step pre-positions the bill of lading at the finance center for eventual reconciliation with carrier invoices. When the finance center cannot reconcile an

invoice with a bill of lading, it transmits a bill of lading information request transaction to the shipper via MTMC. The shipper responds with either a bill of lading correction or cancellation, or, if it cannot find a bill of lading, it notifies the finance center by sending a bill of lading information response transaction.



Note: Bill of lading includes both GBLs and CBLs.

Figure C-11.
Bill of Lading from Shipper to Finance Center Operating Concept

GBL Implementation Plan and Schedule

As noted previously in Chapter 3 of this plan, the electronic GBL project is operating in a limited production environment as integration testing continues. The remaining issues are associated with expanding the use of electronic GBLs beyond the current user base and addressing the actions identified during the SIT. Four Shipper systems — Distribution Standard System (DSS); CFM Field Module (CFM-FM); Transportation Automated Management System (TRAMS); and Cargo Movement Operations System (CMOS) — are capable of producing electronic GBLs. The Defense transportation community has already completed the development of functional requirements and reviewed EDI standards and conventions. Additionally, several systems are now preparing to test electronic GBLs, including the Transportation Coordinator's Automated Information for Movement System II (TC AIMS II), Stock Control and Distribution (SC&D); and the Consolidated Aerial Port System (CAPS II). The program offices for those systems, in conjunction with MTMC, should follow the schedule provided in Figure C-12 to complete the testing process.

Task	Number of months											
	1	2	3	4	5	6	7	8	9	10	11	12
1.0 Develop functional requirements ^a												
2.0 Review EDI standards and conventions ^a												
3.0 Specify technical operating requirements ^a												
4.0 Integrate and test system												
4.1 Modify application systems												
4.2 Develop interface programs												
4.3 Arrange for telecommunications ^a												
4.4 Update operating procedures												
4.5 Train operators												
4.6 Test, evaluate, and modify system												
5.0 Implement production system												

Note: A detailed implementation plan for this capability is contained in the *Defense Intransit Visibility Integration Plan*, United States Transportation Command, February 1995.

^aIndicates the task is complete.

Figure C-12.
Electronic GBL Project — Testing Schedule

Several other systems are also developing an electronic GBL capability. They include the Navy Automated Transportation and Document System (NAVADS); Marine Air Ground Task Force War Planning System II (MAGTAF II); Department of the Army Movements Management System — Redesign (DAMMS-R); and Worldwide Port System (WPS). The program offices for those systems should complete their development and testing following the schedule presented in Figure C-13.

Task	Number of months											
	1	2	3	4	5	6	7	8	9	10	11	12
1.0 Develop functional requirements ^a												
2.0 Review EDI standards and conventions ^a												
3.0 Specify technical operating requirements												
3.1 Identify software requirements	■	■										
3.2 Establish telecommunications strategy	■	■	■									
4.0 Integrate and test system												
4.1 Modify application systems	■	■	■	■								
4.2 Develop interface programs				■	■	■	■					
4.3 Arrange for telecommunications ^a				■	■	■						
4.4 Update operating procedures				■	■	■						
4.5 Train operators							■	■				
4.6 Test, evaluate, and modify system							■	■				
5.0 Implement production system								▲				

^aIndicates the task is complete.

Figure C-13.
Electronic GBL Project — Development and Testing Schedule

CBL Implementation Plan and Schedule

The implementation schedule in Figure C-14 was originally published in the *Defense Intransit Visibility Integration Plan*. Although the implementation steps remain valid, the dates have been revised to reflect delays.

Before the Defense transportation community implements an electronic CBL capability, it needs to resolve two business issues:

- ◆ Can the Defense Finance and Accounting Center – Indianapolis Center (DFAS-IN) acquire the authority to pay CBLs from a centralized appropriated fund?
- ◆ Should DFAS-IN pay CBL charges without a prepayment audit capability at MTMC?

Task	1996				1997	
	Jan	Apr	Jul	Oct	Jan	Apr
1.0 Develop functional requirements						
1.1 Finalize operating concepts						
1.2 Detail data requirements						
1.3 Identify and resolve business and legal issues						
2.0 Review EDI standards and conventions						
2.1 Map data requirements						
2.2 Modify ASC X12 transaction sets						
2.3 Prepare implementation conventions						
3.0 Specify technical operating requirements						
3.1 Review and complete hardware specifications						
3.2 Identify software requirements						
3.3 Establish telecommunications strategy						
4.0 Integrate and test system						
4.1 Procure and install hardware and software						
4.2 Modify application systems						
4.3 Develop interface programs						
4.4 Arrange for telecommunications						
4.5 Update operating procedures						
4.6 Train operators						
4.7 Test, evaluate, and modify system						
5.0 Implement production system						▲

Figure C-14.
Electronic CBL Project — Implementation Schedule

BILL OF LADING FROM SHIPPER TO CARRIERS, CONSIGNEES, AND OTHERS

The Defense transportation community intends to use the CFM system to distribute electronic bills of lading. If this practice proves effective, implementing the capability with one trading partner should serve as a model for expanding the capability to others.

Operating Concept

By using the CFM system to distribute all electronic bills of lading for CONUS movements, the Defense transportation community can simplify the process of exchanging and tracking bill of lading information. The operating concept shown in Figure C-15 calls for the shipper to transmit electronic bill of lading information and correction information to the CFM system. That system

then broadcasts a copy of the bill of lading to all interested parties including the carrier, consignee, ports, and fiscal stations.

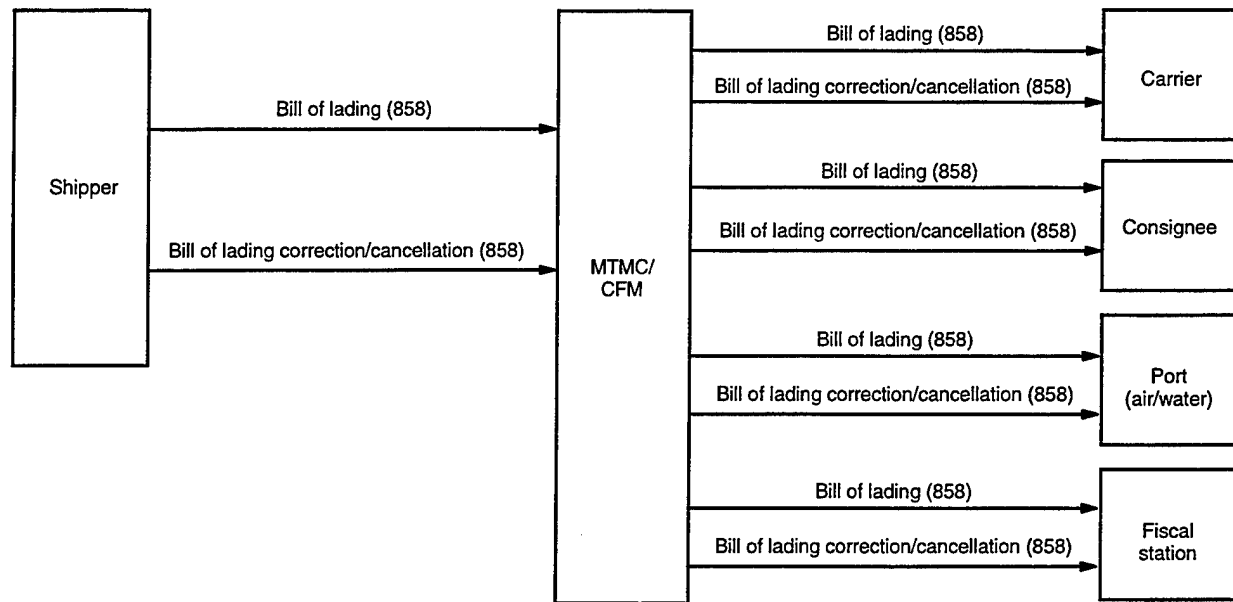


Figure C-15.

Bill of Lading from Shipper to Carriers, Consignees, and Others Operating Concept

Implementation Plan and Schedule

When the Defense transportation community selects a start date for implementing the additional electronic bill of lading exchanges described in Figure C-15, the tasks and schedule shown in Figure C-16 should apply.

Task	Number of months						
	1	2	3	4	5	6	7
1.0 Develop functional requirements	■	■					
1.1 Finalize operating concepts							
1.2 Detail data requirements							
1.3 Identify and resolve business and legal issues							
2.0 Review EDI standards and conventions	■	■	■				
2.1 Map data requirements							
2.2 Modify ASC X12 transaction sets							
2.3 Prepare implementation conventions							
3.0 Specify technical operating requirements	■	■	■				
3.1 Review and complete hardware specifications							
3.2 Identify software requirements							
3.3 Establish telecommunications strategy							
4.0 Establish carrier trading partners		■	■	■			
4.1 Solicit carrier industry							
4.2 Execute trading partner agreements							
4.3 Develop test plan							
5.0 Integrate and test system				■	■	■	■
5.1 Procure and install hardware and software							
5.2 Modify application systems							
5.3 Develop interface programs							
5.4 Arrange for telecommunications							
5.5 Update operating procedures							
5.6 Train operators							
5.7 Test, evaluate, and modify system							
6.0 Implement production system							

Figure C-16.
Bill of Lading from Shipper to Carriers, Consignees, and Others Project — Implementation Schedule

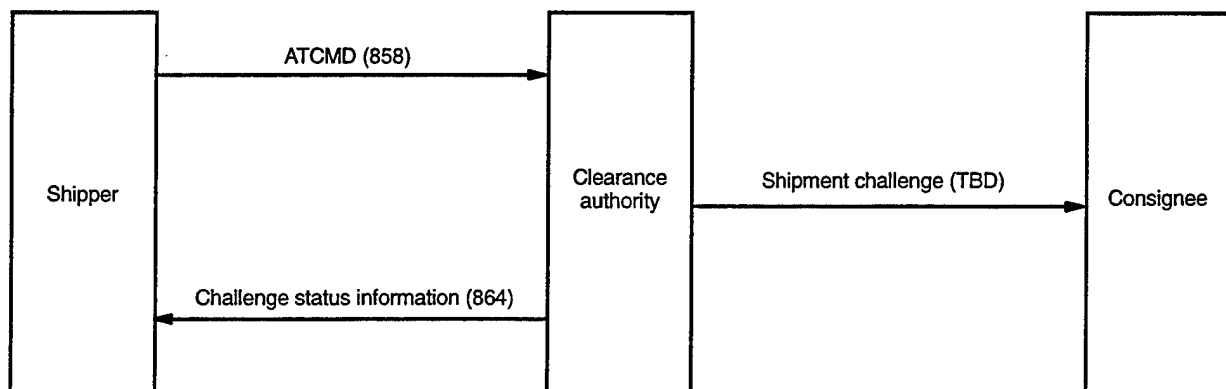
Overseas Shipment Documents

As noted previously in Chapter 3 of this plan, the overseas shipment documents process is the largest and most complex of all the DTEDI projects. It consists of three subprojects: Advance Transportation Control and Movement Document (ATCMD) from shipper to clearance authority; bill of lading and other shipment information transactions from shipper to port of debarkation (POD); and various shipment information from POD to consignee. The

implementation of these three subprojects depends on the availability of automation at all nodes of the overseas transportation pipeline. Because that capability does not exist, the Defense transportation community can only propose an operating concept and timeline. This section describes the operating concepts of all three subprojects and presents a schedule for evaluating the feasibility of their implementation.

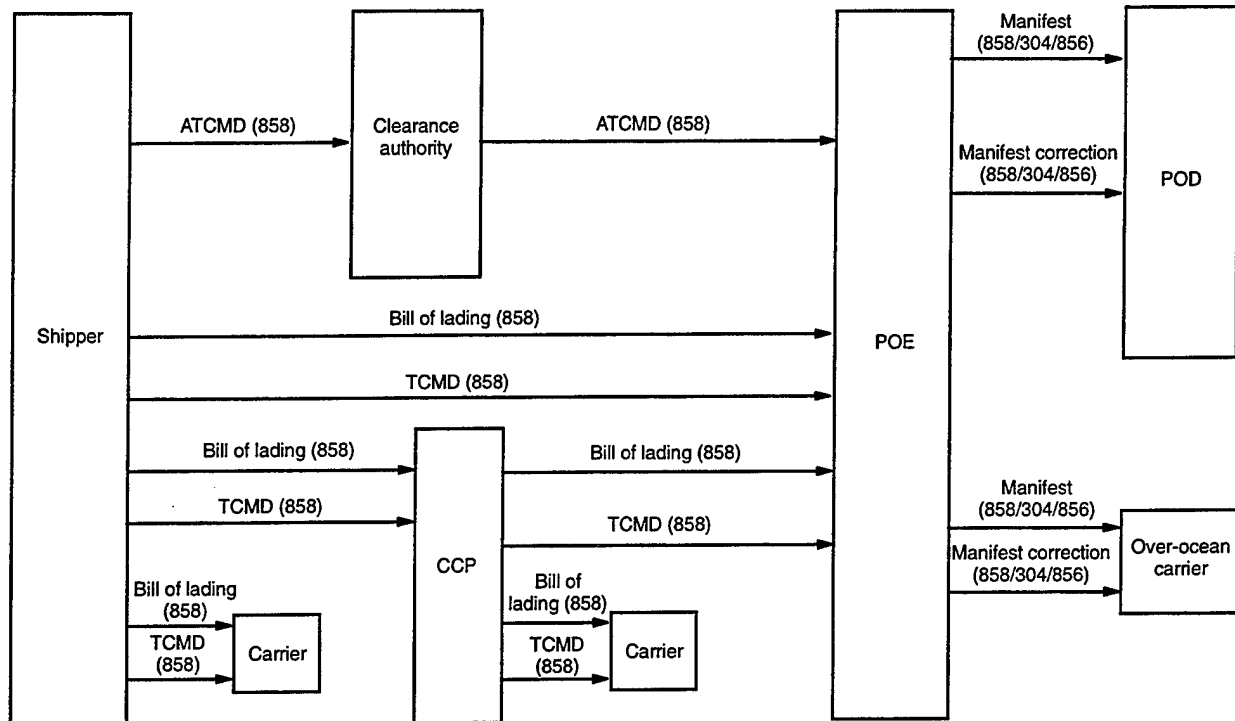
OPERATING CONCEPTS

Figures C-17 through C-19 illustrate the operating concepts for the three subprojects of the overseas shipment documents process. Figure C-17 presents the operating concept for exchanging ATCMD information between a shipper and clearance authority. Figure C-18 presents the operating concept for transmitting bills of lading from a shipper to a POD, while Figure C-19 shows the operating concept for exchanging bill of lading information between a POD and consignee. These operating concepts need to be thoroughly analyzed before they can be considered complete. Upon the selection of an overseas theater transportation system, the Defense transportation community needs to develop the operating concept for exchanging bill of lading information supporting intra-theater movements.



Note: The shipper may be in CONUS or OCONUS.

Figure C-17.
Bill of Lading from Shipper to Clearance Authority Operating Concept



Note: The shipper may be in CONUS or OCONUS. TCMD = Transportation Control and Movement Document; CCP = container consolidation point.

Figure C-18.
Bill of Lading from Shipper to POD Operating Concept

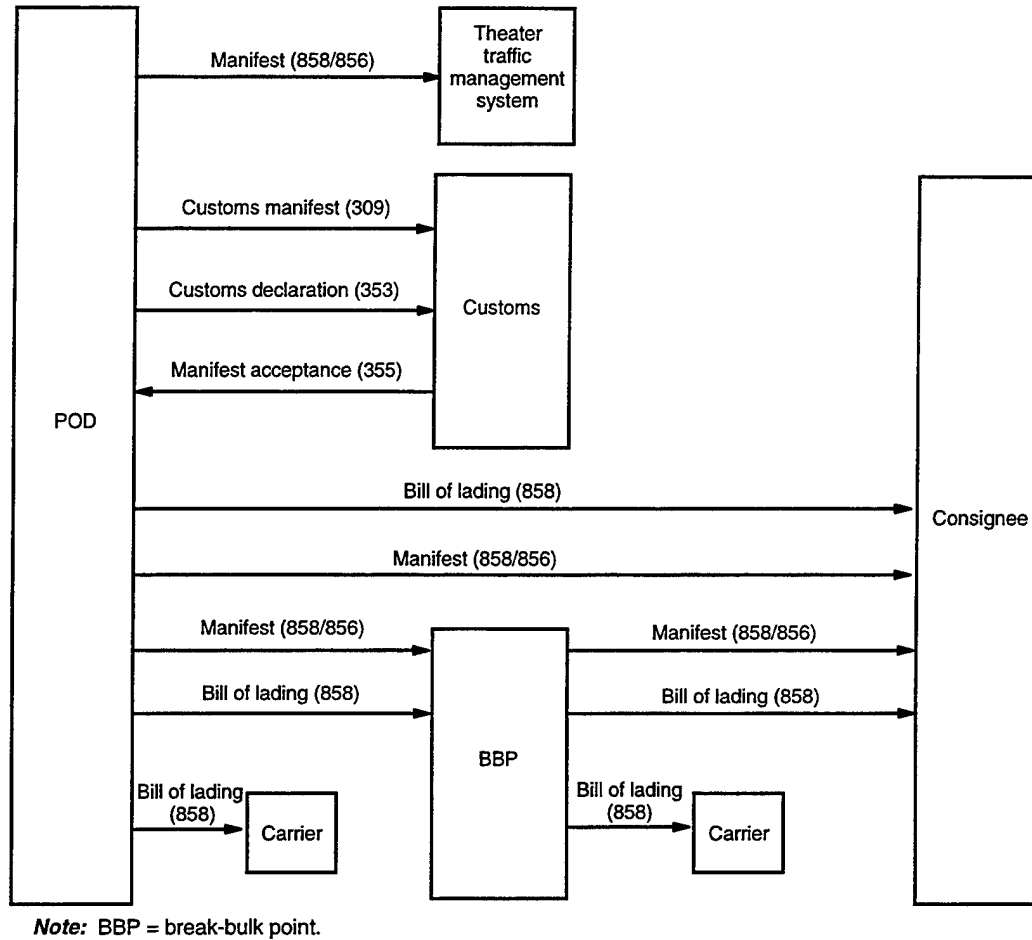


Figure C-19.
Bill of Lading from POD to Consignee Operating Concept

PROJECT EVALUATION SCHEDULE

To finalize the operating concepts and develop implementation plans for all three overseas shipment document subprojects, USTRANSCOM needs to perform the tasks listed in Figure C-20 for each.

Task	1995	1996				
	Dec	Jan	Feb	Mar	Apr	May
1.0 Identify trading partners and systems	—					
2.0 Finalize operating concept		—				
3.0 Assess benefits of implementing EDI techniques			—			
4.0 Develop implementation plan				—		

Figure C-20.
Overseas Shipment Document Project — Evaluation Schedule

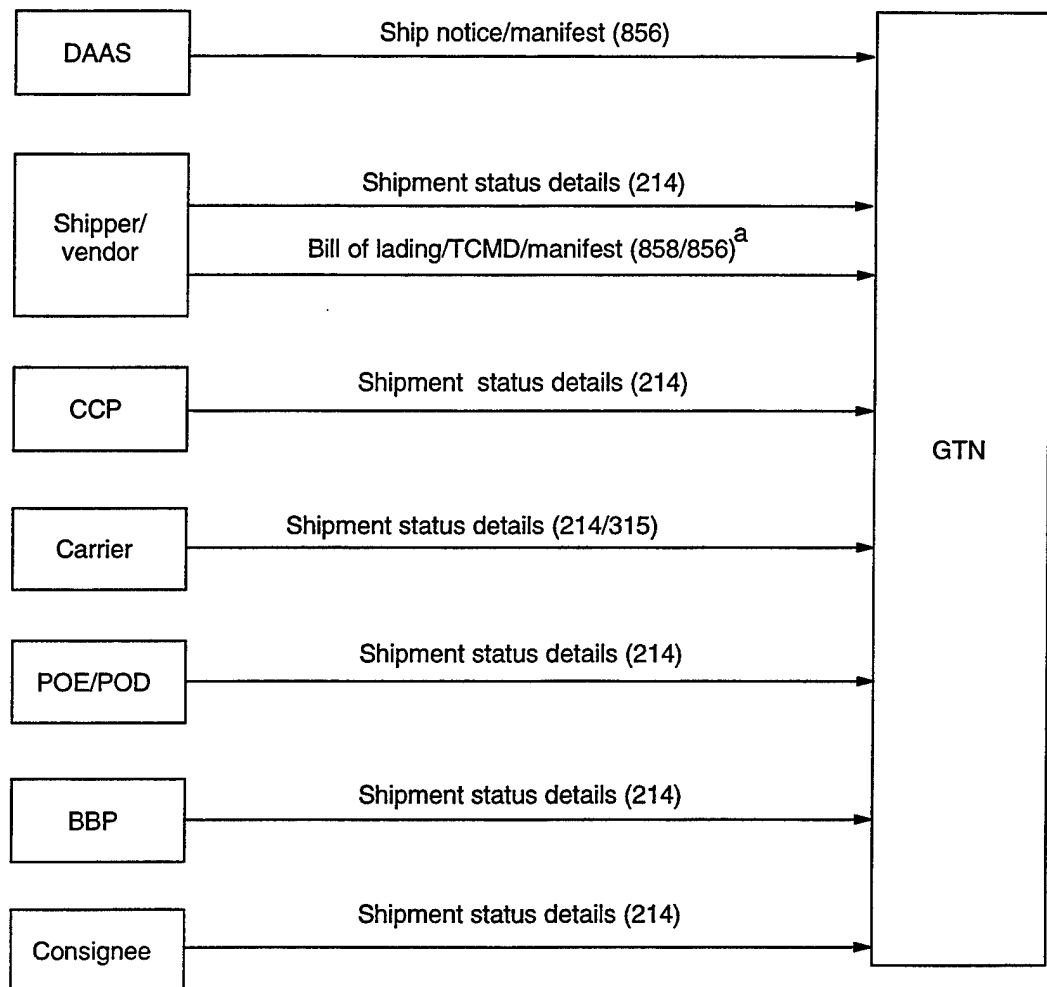
Status Information

The *Defense Intransit Visibility Integration Plan* provides operating concepts and schedules for exchanging shipment status information on the movement of freight throughout DTS. This section summarizes those concepts and schedules. Because the entire success of the intransit visibility (ITV) program depends on the expeditious and comprehensive implementation of the status information project, it should receive the highest implementation priority from the Defense transportation community.

OPERATING CONCEPT

For the ITV program to succeed, each node in DTS needs to generate detailed shipment status information on all movements it processes. Then it needs to transmit that information to the Global Transportation Network (GTN). As the central repository for all transportation status information, GTN is the cornerstone of the ITV program.

Under this operating concept, an ICP or other supply activity would generate MROs that contain details about the shipment. That information includes the requisition number and the national stock number (NSN). Using ASC X12 Transaction Set 856, Ship Notice, the ICP would then pass that information along with the transportation control number (TCN) to GTN through the Defense Automatic Addressing System (DAAS). GTN would use that information to establish a shipment reference record in its tracking database. When MRO information is unavailable, such as in the case of a unit move, the shipper would use the ASC X12 Transaction Set 858, Shipment Information, to forward a copy of the bill of lading to GTN. After establishing a reference record for the shipment, GTN would receive an ASC X12 Transaction Set 214, Transportation Carrier Shipment Status Message, from every node in DTS that handles the shipment. Figure C-21 shows an overview of this operating concept.



^aShipment record from shipper to GTN only for unit moves and vendor shipments.

Figure C-21.
Shipment Status Operating Concept

SUMMARY IMPLEMENTATION SCHEDULE

The *Defense Intransit Visibility Integration Plan* also provides detailed implementation plans and schedules for all freight transportation systems to report shipment status information. Figure C-22 summarizes those schedules.

Task	Start-end dates	1995		1996		1997		1998		1999	
		Jan	Jul	Jan	Jul	Jan	Jul	Jan	Jul	Jan	Jul
Interface GTN with CONUS shippers											
DAAS	1Q95	▲									
CFM ^a	4Q95-1Q97										
TC AIMS II	3Q95-2Q96										
Interface GTN with domestic carriers	1Q95-1Q96										
Interface GTN with port systems ^b	4Q96-1Q98										
Interface GTN with theater systems											
DAMMS-R	2Q96-1Q97										
New theater system	2Q97-1Q98										
Interface port systems with theater systems ^b	1Q98-2Q99										
Interface theater system with foreign carriers	1Q98-4Q98										

Note: Month in columns indicates a six-month period beginning with that month.

^aAssumes all CONUS shipper systems will pass bill of lading data through the CFM system.

^bPort systems include WPS and CAPS II.

Figure C-22.
Status Information — GTN Interface Implementation Schedule

Discrepancy Reports

Processing discrepancy reports is the last process identified under the movement category. All nodes of DTS must generate a discrepancy report when the contents of a shipment do not match the description or condition in the associated movement documentation. The information from those reports is used to file reimbursement claims with carriers for loss or damage to items that occur during transit.

The Defense transportation community plans to use the ASC X12 Transaction Set 842, Nonconformance Report (in accordance with DLMS Version 2.0), for reporting discrepancies that occur during freight movements. Also, the activities responsible for reporting discrepancies need to implement the capability to report shipment status information electronically to satisfy DoD's ITV requirements. However, since DLMSO has not yet published a DLMS implementation plan, activities are not being pressured to establish implementation dates. This situation raises several issues that need to be addressed before the reporting of discrepancies is automated. Those issues are provided below:

- ◆ What is the scope of the final operating concept?
- ◆ Does the volume of discrepancy reports warrant the implementation of EDI?

- ◆ Can activities satisfy their discrepancy reporting requirements by building upon electronic transportation status and other EDI capabilities?

OPERATING CONCEPT

The operating concept in Figure C-23 calls for each node in DTS to transmit discrepancy reporting information to the Joint Logistics System Center's (JLSC's) Discrepancy Reporting System (DRS). That system is the central repository and distribution point for all DoD discrepancy reporting information. All supply, procurement, transportation, finance, and legal activities that need access to that information would exchange ASC X12 Transaction Set 842, Nonconformance Report, via DRS. The transportation operating concept, however, needs to be finalized.

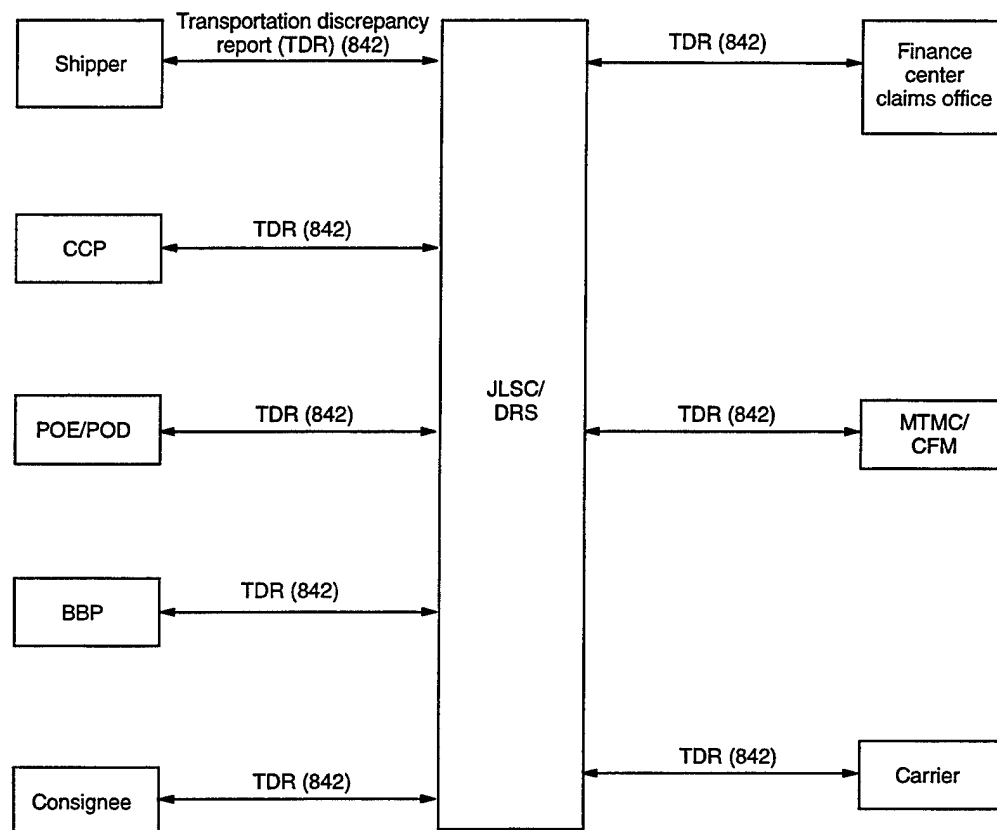


Figure C-23.
Discrepancy Reporting Operating Concept

PROJECT EVALUATION SCHEDULE

Figure C-24 lists the tasks and schedule for evaluating the feasibility of replacing manually prepared discrepancy reports with electronic versions.

Task	1996							
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.0 Identify trading partners and systems		■	■					
2.0 Finalize operating concept				■				
3.0 Assess benefits of implementing EDI techniques					■	■	■	
4.0 Develop implementation plan							■	

Figure C-24.
Discrepancy Reports Project — Evaluation Schedule

PAYMENT

The payment process is divided into three projects — invoices, carrier payment, and claims.

Invoices

Each year, DFAS-IN pays more than 1 million invoices for domestic freight shipments, while MSC pays 52,000 invoices for approximately 1,000 ocean cargo manifest shipments. Together, electronic invoice processing is expected to avoid significant costs associated with data entry and provide an efficient operating environment for conducting prepayment auditing. Although AMC does not process invoices, it maintains an accounting process that pays carriers for commercial airlift and bills Defense activities for organic airlift services. AMC needs to examine its invoice and payment requirements for EDI opportunities.

OPERATING CONCEPT

As shown in Figure C-25, the operating concept for invoices calls for domestic freight carriers to submit invoices to DFAS-IN using one of four ASC X12 Transaction Sets: 110, Air Freight Details and Invoice; 210, Motor Carrier Details and Invoice; 410, Rail Carrier Details and Invoice; and 859, Freight Invoice. DFAS-IN also receives GBLs with their full costs from the CFM system in the form of the Transaction Set 858, Shipment Information. Those GBLs are then compared with the invoice amounts submitted by the carriers. If DFAS-IN does not have any electronic shipment information when an invoice arrives, it has the capability to track the shipment information back to the responsible shipping activity through the CFM system. Shippers are to respond with the information through the CFM system using one of two ASC X12 Transaction Sets: 858, Shipment Information, and 214, Transportation Carrier Shipment Status Message. The latter transaction set is used to notify DFAS-IN of the GBL status. Currently,

all of the above transactions, except for notifying carriers of invalid invoices, are in testing.

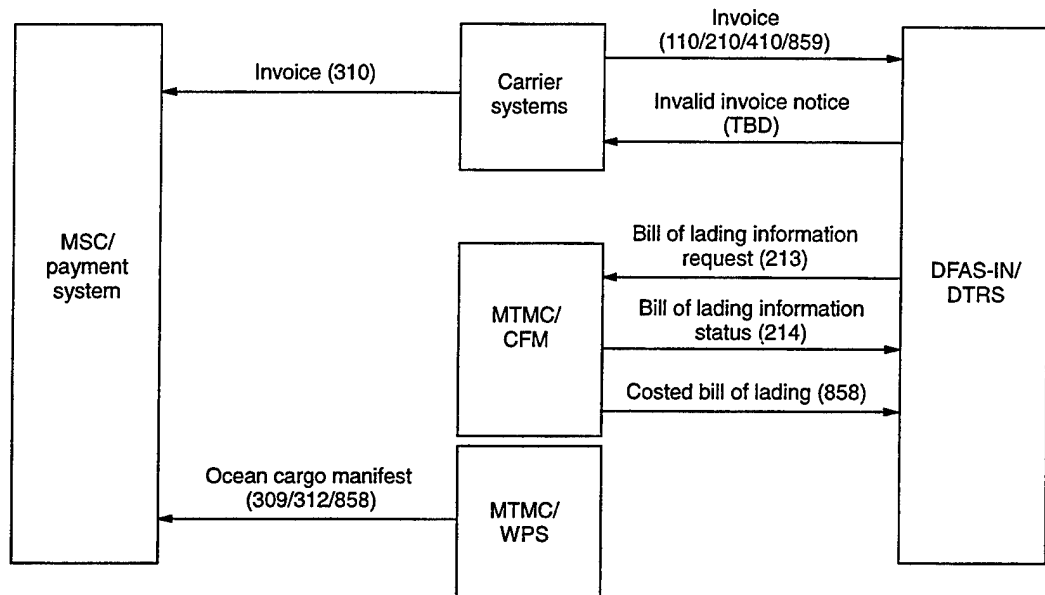


Figure C-25.
Invoice Operating Concept

Ocean carriers would submit invoices for ocean cargo shipments using the ASC X12 Transaction Set 310, Ocean Carrier Details and Invoice. Those invoices would then be reconciled against an ocean cargo manifest that contains information pertaining to all TCMDs on the vessel. Three ASC X12 Transaction Sets — 309, U.S. Customs Manifest; 312, Ocean Arrival Notice; and 858, Shipment Information — should be considered for use when the Defense transportation community finalizes the ocean invoice process operating concept.

IMPLEMENTATION PLAN AND SCHEDULE

The tasks and schedule shown in Figure C-26 apply to AMC and MSC. Those tasks include detailing the operating concept, developing the required implementation conventions, establishing the required technical architecture, establishing trading partners, integrating and testing the system, and implementing the production system.

Task	Number of months						
	1	2	3	4	5	6	7
1.0 Develop functional requirements	■	■					
1.1 Finalize operating concepts							
1.2 Detail data requirements							
1.3 Identify and resolve business and legal issues							
2.0 Review EDI standards and conventions	■	■	■				
2.1 Map data requirements							
2.2 Modify ASC X12 transaction sets							
2.3 Prepare implementation conventions							
3.0 Specify technical operating requirements	■	■	■				
3.1 Review and complete hardware specifications							
3.2 Identify software requirements							
3.3 Establish telecommunications strategy							
4.0 Establish carrier trading partners		■	■	■			
4.1 Solicit carrier industry							
4.2 Execute trading partner agreements							
4.3 Develop test plan							
5.0 Integrate and test system				■	■	■	■
5.1 Procure and install hardware and software							
5.2 Modify application systems							
5.3 Develop interface programs							
5.4 Arrange for telecommunications							
5.5 Update operating procedures							
5.6 Train operators							
5.7 Test, evaluate, and modify system							
6.0 Implement production system							▲

Figure C-26.
Invoice Project — MSC and AMC Implementation Schedules

Carrier Payment

DoD reaps two primary benefits from paying carriers electronically — it avoids the cost associated with writing and disbursing checks, and it frees up personnel positions for other responsibilities. The carriers should be able to realize these same benefits from submitting electronic invoices to DoD.

OPERATING CONCEPT

The operating concept calls for DFAS-IN's DTRS to provide the information needed for electronic funds transfer (EFT) to the standard accounting and disbursing system. That system would be responsible for transmitting payment to a carrier's bank using a National Automated Clearing House Association (NACHA) standard, Corporate Trade Exchange (CTX). The NACHA standard accommodates the ASC X12 Transaction Set 820, Payment and Remittance Advice. Commercial companies typically use one of two alternatives for supplying carriers with payment and remittance advice information: direct from the payor or indirectly through the bank that receives the CTX. (The finance center is also responsible for supplying GSA with shipment, invoice, and payment information and MTMC with invoice and payment information.) The operating concept is shown in Figure C-27. MSC should consider using a similar operating concept for paying ocean carriers.

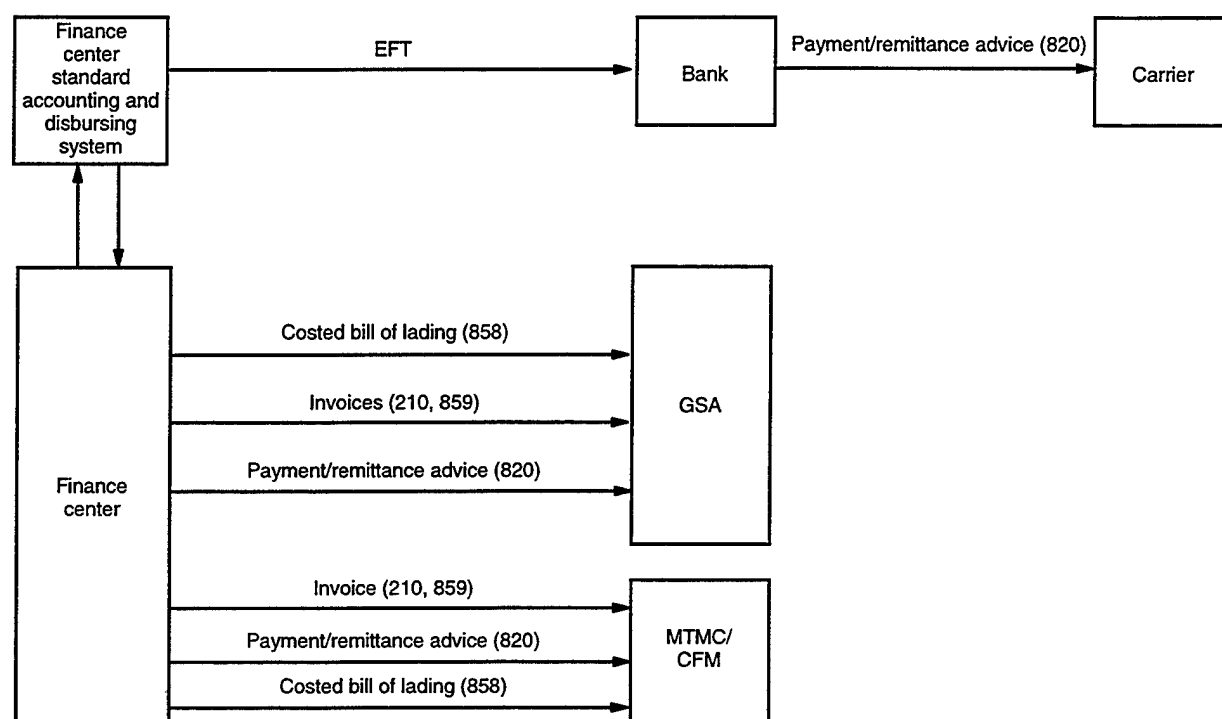


Figure C-27.
Carrier Payment Operating Concept

IMPLEMENTATION PLAN AND SCHEDULE

The plan and schedule for implementing the carrier payment concept is presented in Figure C-28. Unlike other EDI efforts, EFT requires a three-way relationship involving DoD, banks, and carriers. Establishing such a relationship will require development of an effective strategy for initiating new trading partners.

Task	Number of months								
	1	2	3	4	5	6	7	8	9
1.0 Develop functional requirements	■	■							
1.1 Finalize operating concepts									
1.2 Detail data requirements									
1.3 Identify and resolve business and legal issues									
2.0 Review EDI standards and conventions		■	■	■					
2.1 Map data requirements									
2.2 Modify ASC X12 transaction sets									
2.3 Prepare implementation conventions									
3.0 Specify technical operating requirements		■	■	■					
3.1 Review and complete hardware specifications									
3.2 Identify software requirements									
3.3 Establish telecommunications strategy									
4.0 Establish carrier and banking trading partners				■	■	■			
4.1 Develop marketing plan									
4.2 Solicit trading partners									
4.3 Execute trading partner agreements									
4.4 Develop test plan									
5.0 Integrate and test system							■	■	
5.1 Procure and install hardware and software									
5.2 Modify application systems									
5.3 Develop interface programs									
5.4 Arrange for telecommunications									
5.5 Update operating procedures									
5.6 Train operators									
5.7 Test, evaluate, and modify system									
6.0 Implement production system									▲

Figure C-28.
Carrier Payment Project — Implementation Schedule

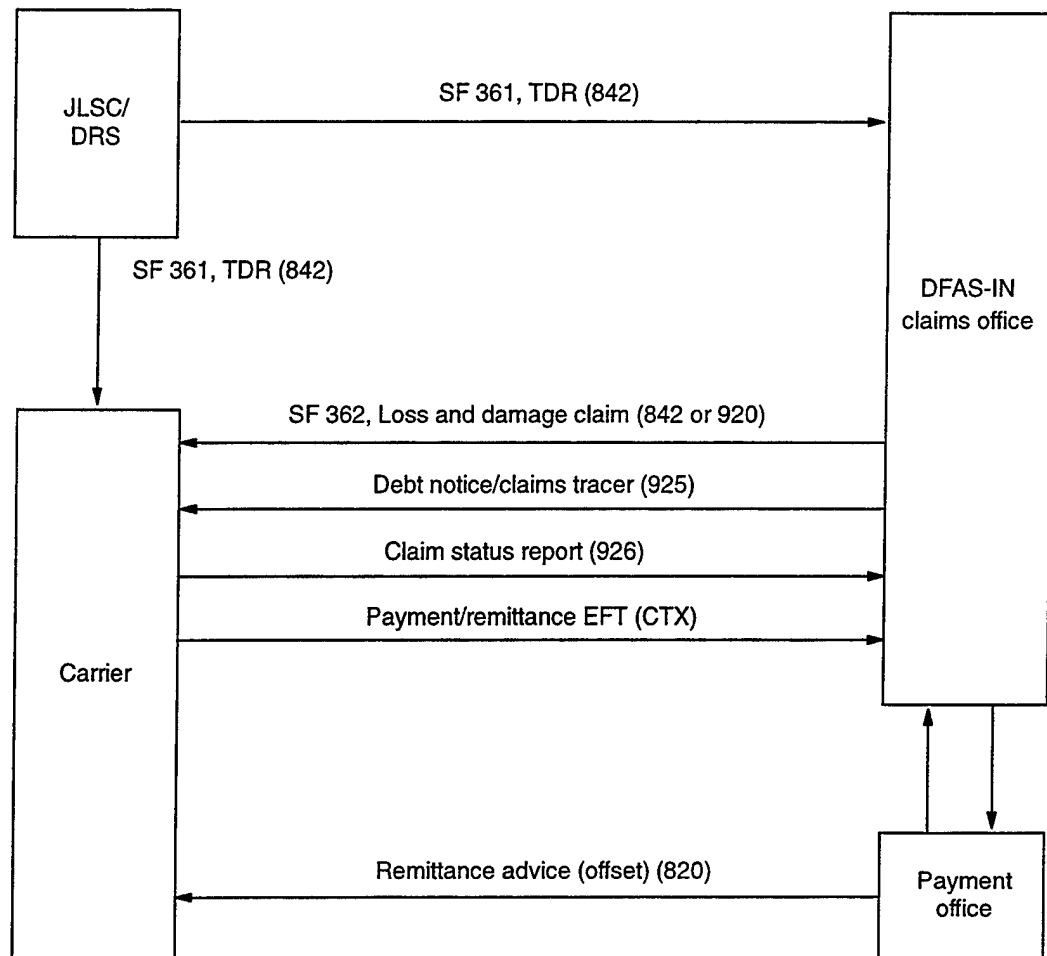
Claims

DFAS-IN's claims office adjudicates DoD claims with commercial carrier industry that stem from shipment discrepancies upon delivery. To illustrate the importance of automating the claims process, DFAS-IN receives approximately 15,000 claim requests annually that, when adjudicated, result in 5,000 loss and damage claims to carriers.

OPERATING CONCEPT

The TDR conversion effort discussed previously in this appendix calls for DRS to collect TDRs from consignees and transmit them to carriers and the

claims office using the ASC X12 Transaction Set 842, Nonconformance Report. Upon receipt of that transaction set, the claims office begins the adjudication process. If it determines that the carrier owes DoD for loss and damage, an EDI transaction would replace the U.S. Government Freight Loss and Damage Claim form that requests payment from the carrier. Either the ASC X12 Transaction Set 842 or Transaction Set 920, Loss and Damage Claim — General Commodities, should be considered for that purpose. Carriers have 120 days to pay or to dispute the claim. Carriers could either pay DoD via EFT (a reverse of the payment operating concept described previously) or transmit information on the dispute to the claims office using the ASC X12 Transaction Set 926, Claims Status Report. If the claims office does not receive appropriate responses within 120 days, debt notices would be transmitted to the carrier using the ASC X12 Transaction Set 925, Claims Tracer. Finally, the claims office's last resort for collection from the carrier would be to request payment offset on a future freight bill. Notification of offsets would be accomplished electronically using the ASC X12 Transaction Set 820, Payment/Remittance Advice. Figure C-29 provides an overview of this operating concept.



Note: SF = Standard Form.

Figure C-29.
Claims Operating Concept

PROJECT EVALUATION SCHEDULE

Since the claims operating concept is not fully developed, the DFAS-IN claims office, in coordination with JLSC, needs to finalize it before preparing an implementation plan. When finalizing that operating concept, the DFAS-IN claims office needs to identify prospective trading partners, reach agreement on the EDI standards to be employed, identify the systems that need to be upgraded, and determine the expected benefits. The success of this project depends on a successful implementation of the TDR conversion project. Figure C-30 presents a schedule for developing an implementation plan.

Task	1996							
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.0 Identify trading partners and systems								
2.0 Finalize operating concept								
3.0 Assess benefits of implementing EDI techniques								
4.0 Develop implementation plan								

Figure C-30.
Claims Process Project — Evaluation Schedule

SUMMARY

This appendix proposes an operating concept and implementation plan for 15 potential EDI projects that, when fully operational, would enhance the overall performance and efficiency of Defense transportation. A few of those projects have already been completed, but most are in the planning or evaluation stage. The proposed operating concepts and implementation plans are provided as a means of transitioning more projects from the planning stage through development to operational capability.

APPENDIX D

Personal Property

To be developed at a later date.

APPENDIX E

Passenger

To be developed at a later date.

REPORT DOCUMENTATION PAGE

Form Approved
OPM No.0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources gathering, and maintaining the data needed, and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

1. AGENCY USE ONLY (Leave Blank)		2. REPORT DATE June 1996	3. REPORT TYPE AND DATES COVERED Final
4. TITLE AND SUBTITLE Defense Transportation EDI Program Implementation Plan			5. FUNDING NUMBERS C DASW01-95-C-0019 PE 0902198D
6. AUTHOR(S) M. Augustine Creedon			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Logistics Management Institute 2000 Corporate Ridge McLean, VA 22102-7805			8. PERFORMING ORGANIZATION REPORT NUMBER LMI- TR301MR1
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) United States Transportation Command TCJ3/J4-LT 508 Scott Drive Scott Air Force Base, IL 62225-5357			10. SPONSORING/MONITORING AGENCY REPORT NUMBER
11. SUPPLEMENTARY NOTES			
12a. DISTRIBUTION/AVAILABILITY STATEMENT A: Approved for public release; distribution unlimited			12b. DISTRIBUTION CODE
13. ABSTRACT (Maximum 200 words) The Defense transportation community is preparing to accelerate the implementation of electronic data interchange techniques throughout the Defense transportation system. In preparation for that effort, this report identifies four categories (tender submission, planning, movement, and payment) of the transportation business process and, within those four categories, proposes 15 EDI projects with milestones and schedules. It also presents several program management success factors including program administration, technology management, and future initiatives. Finally, it summarizes Defense transportation telecommunication requirements describing the current telecommunications strategy and future alternatives.			
14. SUBJECT TERMS EDI, electronic data interchange, ITV, intransit visibility, transportation, transportation payment, telecommunications, electronic commerce, X12, United States Transportation Command, USTRANSCOM, DLMS.			15. NUMBER OF PAGES
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL